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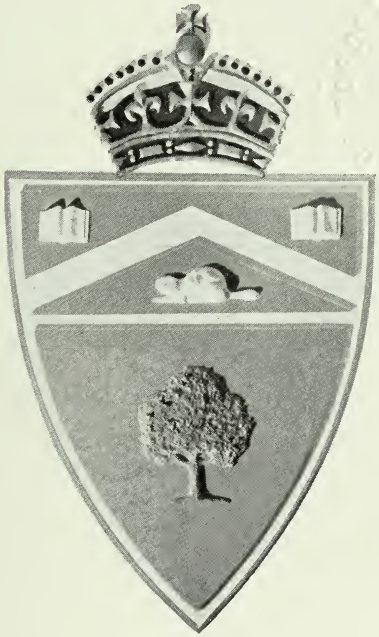
TRANSACTIONS

AND

YEAR BOOK

1941



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ENGINEERING SOCIETY

THE UNIVERSITY OF TORONTO

THE "DEAN"

Dedication

To the honour of Brigadier-General C. H. Mitchell, Dean of the Faculty of Applied Science and Engineering, on his graduating with honours from "School" after twenty-two years, this issue of TRANSACTIONS *is respectfully dedicated.*

* * *

Just after the last war, after serving his country for its duration, the "Dean", as he is popularly known, came to School with the class of 1919.

Since that year Dean Mitchell has worked hard both at his profession and on our behalf as Dean of this Faculty. Always with Schoolmen's best interests at heart, he has striven to mould high school boys and the freshman year into men—schoolmen, who have been graduating from this faculty for so many years. A quick glance at the long list of outstanding engineers in every field will bear witness to the fact that the Dean has not striven in vain.

This year, as a new and more terrible war is barely under way, Dean Mitchell is graduating with the proud class of 4T1. With the invaluable experience gained in the Great War he will endeavour again to spend all his time and ability towards pushing this new war to a successful and victorious close.

All of you in the first three years will miss him; but those of 4T1, his fellow graduates, will remember him always as the "Dean", a true friend, the man responsible for our School Spirit which will never die.

Roll of Service

THE Roll of Service compiled last year has been expanded to include those who have since volunteered for Active Service. Only the names of those School graduates who have enlisted for Active Service are listed here. Another large number are occupying key positions in vital war industries.

To make a complete roll in the time available has been an impossible task, and, unfortunately, there are probably a number of names which should have been included which have not come to our notice. Moreover, even when it had been ascertained that a man was serving in the Army, Navy, or Air Force, it was often impossible to obtain information as to his unit or rank.

We wish to acknowledge the very kind co-operation of the Records' Office of the University of Toronto which has been invaluable in compiling this Roll of Service.

Roll of Service

Aitken, D. A., '36	P.O.	R.C.A.F.
Allan, E. B., '16	Lt.	Vet. Guards
Anderson, P. C., '39	Lt.	R.C.O.C.
Annis, C. L., '36	F. Lt.	R.C.A.F.
Austin, C. C.	P.O.	R.C.A.F.
Archibald, S. W., '22	Major	R.C.O.C.
Baird, L. T.	Lt.	R.C.O.C.
Baird, L. W., '34	Lt.	R.C.O.C.
Baird, W. J., '12	Major	R.C.E.
Baker, L. P., '35	Lt.	R.C.O.C.
Baker, M. H., '23	Lt.	R.C.O.C.
Barnes, L. F., '16	Lt.-Col.	R.C.E.
Bartlett, T. S., '37	P.O.	R.C.A.F.
Baxter, W. J. F., '24	Capt.	R.C.C.S.
Beament, G. E., '32	Major	R.C.A.
Beale, J. R., '33	F.O.	R.C.A.F.
Beck, J. B., '36	Lt.	R.C.E.
Beecroft, G. W., '23	Major	R.C.O.C.
Bell, A. A., '23	Major	Staff
Black, A. H., '40	F.O.	R.C.A.F.
Bleaken, W. C., '38	Lt.	R.C.O.C.
Bodwell, G. L., '37	Lt.	R.C.E.
Boehm, C. R., '29	Lt.	R.C.O.C.
Bonus, W. H., '16	Major	R.C.O.C.
Bourchier, B. V., '33	F. Lt.	R.C.A.F.
Bowen, J. A. C., '35	Lt.	R.C.E.
Bradford, J. K., '32	Capt.	R.C.O.C.
Brennon, J. F., '34	Lt.	R.C.A.
Brenneman, A. G., '31	Lt.	R.C.C.S
Breuls, C. P, '24	Capt.	
Bridges, C., '38	Lt.	R.C.E.
Briggs, E. R., '36	P.O.	R.C.A.F.
Brisley, J. L., '40	P.O.	R.C.A.F.
Browne, L. M., '25		
Bryce, J. D., '40	Lt.	R.C.E.
Burden, H. J., '15	Wg. Com.	R.C.A.F.
Burgess, W. J., '39	Lt.	R.C.E.
Burk, J. M., '41	Lt.	R.C.E.
Burness, K. C., '24	Lt.-Col.	G.H.Q. Staff
Burrows, J. C., '36	Lt.	Imperial Army
Butterill, H. J. Mc., '40	Lt.	R.C.O.C.
Butterill, J. B., '31	Lt.	R.C.O.C.
Catto, D. E., '23	Major	R.R.C.

Roll of Service

Catto, J.	Capt.	R.C.C.S.
Catto, R. W., '15	Capt.	Vet. Guards
Clandinan, J. W., '34	Lt.	R.C.O.C.
Childerhose, J. M., '37	P.O.	R.C.A.F.
Chisholm, W. D. A., '27	Lt.	
Clappison, H. G.	F. Lt.	R.C.A.F.
Clawson, W. K., '40	Lt.	R.C.E.
Conover, J. D.	Lt.-Col.	R.C.C.S.
Cooper, J. M.	Capt.	R.C.A.
Cornell, P. J.		R.C.O.C.
Cory, R. Y., '09	Major	48th
Craig, J. H., '12	Major	C.A.T.C.
Daniel, W. H., '15		
Dewar, G. P., '40	Lt.	R.C.E.
Dumbrille, J. C., '23	F.O.	R.C.A.F.
Dutton, W. L., '31	Major	Kent Reg.
Elms, G., '39	P.O.	R.C.A.F.
Elson, M. A., '33	Lt.	R.C.E.
Evans, M. M., '23	Major	Ont. Regt. Tank
Feick, G. E., '28	Lt.	R.C.C.S.
Firth, H. E., '24	Lt.	R.C.O.C.
Fox, J. H., '25	Lt.	R.C.O.C.
Galbraith, R. A. H., '24	Major	R.C.C.S.
Gannon, J. L.		R.C.A.F.
Gardiner, J. D., '40		
Gilbreath, J. H., '39	Lt.	R.C.C.S.
Gilroy, F. W., '33	Lt.	R.C.C.S.
Girvan, J. M., '41	Lt.	R.C.E.
Glazier, A., '39	F.O.	R.C.A.F.
Gray, A. S., '23	Major	R.C.E.
Graham, J. B., '37	F.O.	R.C.A.F.
Gray, R. G., '38		
Griffith, H. D., '26	Bombardier	R.C.A.
Gross, R. F., '35	F. Lt.	R.C.A.F.
Grundy, E., '27	Lt.	R.C.N.V.R.
Haldenby, C. N., '22		
Haldenby, E. W., '21	Brig.	48th
Hanning, A. R., '23	Major	Ont. Regt. Tank
Harkness, D. G., '41		R.C.A.F.
Harris, W. A., '38	AC2	R.C.A.F.
Hawtrey, R. C., '29	F. Lt.	R.A.F.
Hayman, H. L., '23		R.C.E.
Hemphill, J. L., '38	Sub.-Lt.	R.C.N.V.R.

Roll of Service

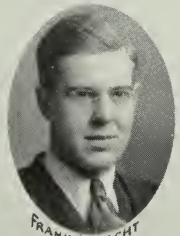
Hendrick, M. M., '32	Sqd. Ldr.	R.C.A.F.
Hepburn, G., '21	Lt.	R.C.C.S.
Hertzberg, C. S. L., '05	Lt.-Col.	R.C.E.
Hertzberg, H. F. H., '07	Major-Gen.	G.S.
Higbee, J. C., '23		R.C.A.F.
Holman, D. M., '40	P.O.	R.C.A.F.
Hornibrook, J. A., '37	Lt.	1st Can. Survey Regt.
Hunter, A. F., '27	Capt.	Perth Regt.
Huestis, R. D., '20	Capt.	R.C.C.S.
Huggins, F. W., '23	Lt.	R.C.O.C.
Jacobi, G. W., '31	F. Lt.	R.C.A.F.
Jeckell, A. W., '27	Sub.-Lt.	R.C.N.V.R.
Jennings, D. C., '40	Sub.-Lt.	R.C.N.V.R.
Jewett, E. S., '33	Capt.	R.C.C.S.
Johnston, G. W. F., '15	Lt.-Col.	R.C.A.
Junkin, R. L., '13	Major	R.C.E.
Keefer, T. C., '39	Lt.	R.C.A.
Keefler, R. H., '24	Major	R.C.A.
Keith, A. G., '37	Sapper	1st Pioneer Battn.
Kingsbury, T. M., '40	Lt.	R.C.E.
Lachland, L. S., '34	Lt.	R.C.A.
Lambe, L. A., '41	Lt.	1st Armoured Div.
Lang, J., '38	Lt.	R.C.E.
Laurie, W. L., '24	Lt.-Col.	R.C.C.S.
Ledingham, W. E., '36	F.O.	R.C.A.F.
Legge, T. A., '26	Capt.	R.C.C.S.
Loudon, T. R., '06	Squad. Ldr.	R.C.A.F.
Lukes, T. O., '41	Lt.	1st Armoured Div.
Lynn, S. L., '39	Lt.	R.C.R.
W. H. Macklin, '24	Major	R.C.C.S.
Maher, G. T., '39	P.O.	R.C.A.F.
McArthur, A. A., '39	Lt.	R.C.C.S.
McArthur, D. R. B., '40	Lt.	R.C.O.C.
MacDonald, D. M., '21	F.O.	R.C.A.F.
MacLachlin, V. D., '34	P.O.	R.A.F.
Mann, A. D., '32	Capt.	R.C.E.
Martin, W. C., '40	Lt.	R.C.A.
Mason, D. H. C., '08	Lt.-Col.	Royal Regt.
Mason, V. V., '41	Lt.	R.C.N.V.R.
McEwen, F. W., '37	Lt.	Ont. Regt. Tank
McFarland, J. L., '39	P.O.	R.C.A.F.
McHugh, W. T.	Capt.	R.C.A.
McIntosh, J. H., '23	Major	R.C.A.

Roll of Service

McKay, H. A., '23		R.C.E.
McKillop, M., '34	F.O.	R.C.A.F.
McLean, K. C., '36	Lt.	R.C.C.S.
McLean, E. H., '31	Capt.	R.C.E.
McManus, H. W.	Capt.	Staff
McQueen, M. V., '23	Lt.-Col.	C.A.S.C.
Meighen, M. C. G., '31	Lt.	R.C.O.C.
Millard, J. R., '31	Lt.	R.C.N.V.R.
Millard, V. S. J., '34	F. Lt.	R.C.A.F.
Miller, H. A., '34	Lt.	R.C.C.S.
Milligan, F. S., '11	Capt.	R.C.E.
Milne, R., '41	Lt.	R.C.E.
Mills, F. L., '18	F.O.	R.C.A.F.
Moogk, E. G., '28	Capt.	R.C.E.
More, G. K., '38	P.O.	R.C.A.F.
Morris, D. T., '27	P.O.	R.C.A.F.
Murphy, A. S. F., '28	Capt.	R.C.O.C.
Murphy, F. A., '36	Capt.	R.C.O.C.
Nash, A. L. S., '22	Major	R.C.A.
Near, J. D., '41	Lt.	R.C.E.
Neelands, R. E., '36	Corp.	R.C.E.
Orok, J. R., '39	Sub.-Lt.	R.N.
Pearce, W. R., '22	F.O.	R.C.A.F.
Pearson, J. W., '26	Lt.	R.C.O.C.
Pepall, J. R., '32	Lt.	R.C.A.
Powell, R. M., '37	Lt.	R.C.N.V.R.
Price, A. V., '23	Lt.	R.C.C.S.
Pullan, E., '20	F.O.	R.C.A.F.
Purvis, W. F., '24	F.O.	R.C.A.F.
Quance, T. S. G., '38	Lt.	R.C.O.C.
Rayner, G. V., '21	Major	A and R Highlanders
Reynolds, J. E., '41	Lt.	R.C.E.
Riddell, D. B., '39	P.O.	R.C.A.F.
Robertson, E. E., '39	P.O.	R.A.F.
Robinson, W. A., '41	Lt.	1st Armoured Div.
Rochereau de la Sabliere, '30	Lt.	R.C.O.C.
Rochester, D. H., '41	Lt.	R.C.E.
Ross, D. B., '38	Sub.-Lt.	R.N.
Rooney, G. W., '41	Lt.	R.C.E.
Rous, C. C., '13	Major	C.A.D.C.
Rowland, J. N., '40	Sub.-Lt.	R.C.N.
Salter, W. A., '37	Lt.	Staff

Roll of Service

Samson, F. A., '27	F. Lt.	R.C.A.F.
Samuel, N. M., '28	Lt.	R.C.O.C.
Sebert, L. M., '40	Lt.	R.C.A.
Shambrook, W. G., '34	Lt.	Royal Hamilton L.I.
Sharp, C. T., '24	Major	Lorne Scots
Sherman, L. C., '10	Col.	R.C.O.C.
Simons, S. J., '40	Lt.	R.C.E.
Sinclair, C. E., '14	Major	No. 2 I.T.C.
Smart, G. W., '26	Major	R.C.C.S.
Smith, A. J. E., '35	Lt.	R.C.E.
Smith, G. E., '30	Lt.	R.C.E.
Smith, K. W., '37	P.O.	R.C.A.F.
Smith, W. D., '33		R.C.O.C.
Spotton, J. G., '22	Capt.	R.C.A.
Stark, G. B., '41	Lt.	1st Armoured Div.
Stewart, H. E., '23	F.O.	R.C.A.F.
Stratford, A. H., '22	Gunner	R.A.
Taylor, W. M., '35	Lt.	Black Watch Regt.
Thomas, A. M., '19	Brig.	11th Brigade
Thompson, C. C.	Lt.-Col.	Toronto Scottish
Thompson, H. G., '22	Lt.-Col.	R.C.O.C.
Thompson, W. L., '27	Capt.	R.C.O.C.
Truman, J. T., '35	Capt.	R.C.O.C.
Waddell, R. C. A., '39	P.O.	R.C.A.F.
Wait, G. E., '20	Wing Cdr.	R.C.A.F.
Waite, R. G., '41	Lt.	1st Armoured Div.
Walkey, G. W., '37	P.O.	R.C.A.F.
Wallbridge, C. L.	Capt.	Hast. and P.E. Regt.
Waters, D. M., '20		
Webb, E. H., '38	Capt.	R.C.E.
Weir, E. A., '41	Lt.	1st Armoured Div.
West, F. R., '34	F. Lt.	R.C.A.F.
Weston, J. E., '34	Lt.	R.C.O.C.
Wilkin, J. G., '41	Lt.	1st Armoured Div.
White, M. R., '24	Capt.	R.C.E.
Williamson, J. E., '40	Lt.	R.C.O.C.
Williamson, Y., '40	Lt.	R.C.E.
Wilson, H. P., '40		R.N.
Witson, F. W., '33	Lt.	R.C.E.
Woods, W. B., '37	P.O.	R.C.A.F.
Young, J. F., '22	Lt.	Vet. Guards
Zuerrer, E. P. J., '41	Lt.	1st Armoured Div.



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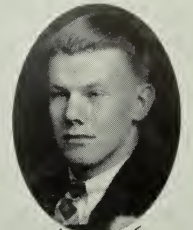

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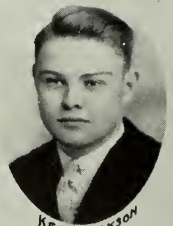

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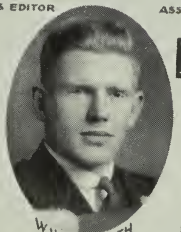

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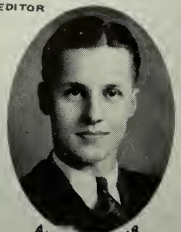

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TRANSACTIONS AND YEAR BOOK

of the

University of Toronto Engineering Society

No. 54 MARCH 1941

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DURING this past year, as an artilleryman would say, we have been under constant harassing fire. The war has put extra strain on all of us, disrupted our time tables, shortened our academic year, and next year will rearrange all of our courses. Many of our class mates and in fact many of us have been premature graduates this year to serve our country either in the Armed Forces or in some vital war industry. Those of us remaining have "carried on" and it is mostly through their untiring efforts that this year's TRANSACTIONS has been completed along lines we hope will be found equal to the high standard of previous year.

No sooner did we have the editorial staff selected, when last year's business manager, "Tommy" Thomas left us to join the Air Force, leaving his department in what has proved to be the capable hands of Al Barry. Then early February saw the editor-in-chief leave for the army, after which the whole staff co-operated in typical "School" manner to produce such results as seen in the book before you.

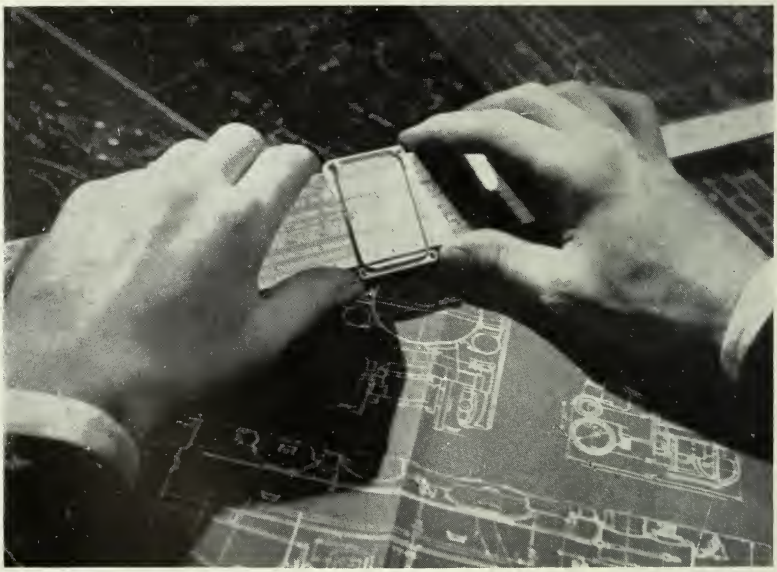
Owing to increased war-time prices with no corresponding increase in subsidy, this year's TRANSACTIONS has been somewhat shortened as to the number of pages. However, this cutting has been done where it will do the least harm and new features have

been added in keeping with the times, which have more than made up for any necessary reductions.

The academic, military, sports, and social highlights of the past year we have been pleased to record in these pages. Once again the coveted Reid Trophy is headed straight for the Little Red Schoolhouse, its perennial home. The Soph-Frosh, School Dinner, the School At-Home, and School Nite interspersed with year parties followed each other in all too rapid succession with the School At-Home deserving of special mention as the "best in years". Remember?

The above functions were invariably followed the next day by a C.O.T.C. or Auxiliary Battalion route march which we will also remember. All of us received military training of some sort during the year and we all hope that in the near future the object of this training will be attained, i.e., that this war in which all our cherished and Christian ideals are at stake will be brought to a just and necessarily victorious ending. I would at this point like to refer every reader to the outside back cover of this issue.

A. L. Lambe.



A MESSAGE FROM THE PRESIDENT

Once more, at a fateful hour in the history of the world, it is my privilege to offer good wishes to the members of the Engineering Society through the medium of TRANSACTIONS AND YEAR BOOK. The work of this term is being intensified in order that men in the third and fourth years may be available for the war demands of industry at as early a date as possible. Your degree has its value as an outward sign of your own accomplishment. What you have learned, what you have become, as possessors of an accurate and disciplined mind, is what really counts. Your engineering training is well fitted to make you material builders of your country and good citizens as well. I wish you the fullest measure of opportunity and success in your profession. Never were you more needed by your King and Country and by the great cause of humane and Christian civilization, than you are to-day.

This volume is dedicated to your Dean, General C. H. Mitchell, who retires at the end of this term, after holding this important office for over twenty years. I join with you in expressing to him our deep appreciation for his years of faithful service both to this University and to the engineering profession in Canada. As a hydraulic engineer at Niagara, as a highly esteemed Intelligence Officer in the Great War, as a member of various technical Royal

Commissions dealing with radical roads and the St. Lawrence Waterways, as twice President of the Toronto Board of Trade, and as Dean of the famous Engineering Faculty of this University, he has made a great contribution to the life and development of our Dominion and Empire. We have all appreciated his kindliness, his sympathy and his friendliness. We wish him well in his years of retirement from academic work.

The masterly survey of this Faculty of Engineering, made by Professor Dugald Jackson last year, is receiving most careful study and many of his recommendations will be carried out in the near future. There will probably be a substantially common First Year, wherein will be laid, for all students, a solid foundation of the fundamentals in mathematics, physics, and chemistry. There will probably be more attention given to English and to Economics. There will probably be a shortening of lecture and laboratory hours to make possible more time for the individual student to read, to think, and to experiment. There will probably be closer relations between the various departments and groups of the Alumni of these departments. We must never rest until we make the good better, and the better best.

Naturally the war has been the background of our work and thinking throughout the year. This war makes special demands upon the technically-trained men. A mechanized equipment needs the Engineer. Many of you will doubtless go directly into the engineering arms of the Service. But munitions, materials, equipment, aeroplanes and ships must be supplied by industry in ever-increasing volume; and here will be the appointed task for many more. Whether in the Active Service, on land, or sea, or air, or in industry, your trained ability will be required. We are in this grim struggle because we believe our national and imperial existence is at stake; because we believe that all those spiritual values—justice, freedom, truth, decency, mercy—which alone make life worth living, are now assailed; because we are resolved to free the enslaved and to prevent the recurrence of similar savage onslaughts in the future; and because we have dedicated ourselves to the defence and purification of a humane civilization.

Godspeed you in these days of war, and in the days of peace which sacrifice, effort, and unity will by the blessing of God, win at last. That peace will be an opportunity for the Engineer to build anew the fair fabric of a nobler national life.

H. J. Cody, *President.*

THE DEAN'S MESSAGE FOR "TRANSACTIONS"

To the Members of the Engineering Society

GENTLEMEN:

The Engineering Society has come through a most interesting year and at the same time a difficult one, because these are difficult times. As has been usual in the past when facing trials, its Officers and Members have splendidly risen to the new situation which the war has imposed on us.

In this second year of the war, the Engineering Society has carried on all its activities with an energy, initiative and ingenuity which will measure up to critical years in the past. It is a long time back to the same period in the last war—twenty-five years—but we can be sure that those graduates who were here at that time as students, will recognize the same continuing spirit of determination, resource and efficiency which prevailed at that time.

We are all facing a new world, a new kind of world, one torn asunder by mad men who would break up all those great principles of democracy and humanity for which our fathers stood.

We look on from across the sea, but we do more than look on. We are all working feverishly to help in every way we can. In no direction can Canada contribute more effectively than in our own engineering field. We should then be very proud these days to be in that profession or preparing for it. We have outstanding opportunities to help and do our bit.

You have been working hard this year at your studies with this great service goal before you. You have been trying to prepare yourselves as well as you can and as quickly as you can to be useful in this great war effort. There is some square hole into which each of you will fit as all square Schoolmen can do and will do, be it now, during the war, or afterwards, when the reconstruction years are upon us after a victorious ending.

You have been urged to keep steady and not get excited or over-wrought by the agitation and turmoil of the war and you have done well in your efforts. You have kept fairly well in the main stream; if you have drifted into eddies let us hope you can swing out again. There are certainly enough buoys about to keep you going on with confidence.

We may wish we could foresee what we shall each be doing next year. (Perhaps it would not be good for us). Most of you now in attendance here will be back to go on with your courses; you of the First and Second Years, certainly. The Third Year, for which provision has been made to get out early this year, may be confronted with some uncertainty; whether studying, working, or warring, it is highly important that everyone, if at all possible, should finish his full course and get as complete instruction as possible before finally leaving the University.

Where you gentlemen of the Graduating Year will find yourselves next year, can be answered in two guesses: You will be either in one of the Armed Services, in Canada or Overseas, or in some vital war industry here in Canada, vigorously helping win the war in our great arsenals and munition works. At any rate, we will go out together and will be taking our places among the war workers outside the University.

It will greatly pain me to leave you gentlemen of the other years behind, but my time has come too, and I must go, even though it has taken twenty-two years to "go through the School"!

They have been very happy years for me and I shall greatly value the friendships and acquaintances I have made with all the Schoolmen of those many years.

Whatever we may be doing and wherever we may be the coming year, we must bend all our energies to win the war. We will all bear in mind the large blue posters which are up in our halls and laboratories this winter—the same as are in the University halls and the munition works in Great Britain:—

IT ALL DEPENDS ON ME!

If we each and all of us think this, and each and all of us do our utmost, our very utmost, on whatever work we are on, and do it with determination and cheerfulness, then

WE SHALL WIN THIS WAR

I thank you all very, very much, you Gentlemen of the Engineering Society, Officers and members, for your great kindness and the honour you paid me at your Engineering Society Dinner in November, for your gold key and for the most useful and artistic silver cases you gave me. I do appreciate also the further honour you do me on my retirement as Dean, in dedicating this number of "Transactions" to me.

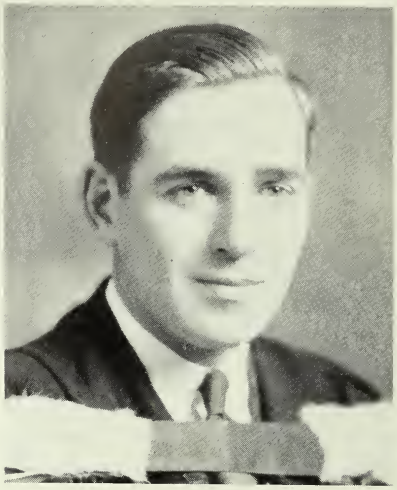
Yours faithfully,

C. H. Mitchell,

Dean.

January 17, 1941.

THE PRESIDENT'S MESSAGE



It is with a feeling of regret that I write this, my last article for publication as President of the University of Toronto Engineering Society.

Never have I been happier, or more contented with my good fortune than in fulfilling my duty as your President.

I came to college for an education, but who would think that it could be obtained under such pleasant conditions. I was indeed fortunate and privileged in being accepted as a student of the respected and admired Faculty of Applied Science and Engineering.

When I say respected and admired, I mean just that. In everything the Schoolmen do, they earn for themselves a respect and admiration that is not enjoyed to so large a degree by any other faculty on the campus.

This year has been a hard one for the Engineering Society Executive. The late registration of the freshmen together with the troubled world conditions, led to great difficulty in estimating the quantity of engineering supplies needed and the prices for which they were to be sold.

After these initial troubles had been solved in the customary efficient manner of engineers, the program for the year's work got under way with the arrival of a surprising number of freshmen, all

eager to undergo the initiation from which they emerge as Schoolmen.

This year the customary physical activity that accompanies our initiation was curtailed so as to not arouse adverse public opinion under the present wartime conditions. Regardless of this, however, we can truly be proud of our freshman class. No year has demonstrated more School spirit, and the fine executive that they elected to represent them is symbolic of their good judgment.

Our 51st Annual School Dinner was an immense success. The letters of admiration received by the committee from prominent business men and leaders in our province were indeed gratifying. The guest speaker, the Hon. G. Howard Ferguson, delivered a most inspiring and suitable address on world conditions. In addition to this, we heard from our beloved and retiring Dean C. H. Mitchell. His message was one that we will remember to our dying days. The attention and respect shown by the undergraduates on this occasion is unquestionable. The Schoolmen who are the leaders on the field of sport are also claimed the finest of gentlemen on such formal occasions as our School Dinner. Gentlemen, you are to be congratulated.

The committee in charge of School At-Home arranged a new type of program this year. It was one in which great attention was paid to detail and one which left opportunity for the committee to display the great organizing ability for which they are noted. The At-Home was a great success this year both financially and socially. It is worthy of note that the dancers voluntarily contributed over $150.00 towards the British War Victims' Relief Fund.

Among other hardships experienced by the executive this year was the heavy work imposed upon the Fourth year, and the increased difficulties arising from re-organization when key men were taken away from their jobs to join the armed forces or to help in some essential industry.

The way in which new men took over these jobs, although practically right in the middle of final examination tests, is to be commended. The advanced date of graduation for Fourth year men did not present an insurmountable object for men incensed with the traditional School spirit.

At the time of this writing the executive is working on a scheme whereby all students of the Faculty of Applied Science and Engineering will be members of their respective departmental clubs.

This will make for better and larger clubs, and it will unite the respective clubs' men intimately with their chosen professions.

It would be nice at this time to enumerate the accomplishments of the present executive. It is enough, however, to know that the year coming to a close has been a highly successful one and that its success is due only to the full co-operation of the students.

Like my predecessors, I also am regretful that my term of office must come to a close. No words that I can say or write will disclose to you the pride in S.P.S. that I have experienced while representing her as the president of its undergraduate society. Long may she live, and God grant that she will enjoy the success and respect in the future that she has in the past. Until my dying days I shall say "I am glad that I am a Schoolman."

BRUCE L. DAVIS,
President.

TRANSACTIONS
1941

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ENGINEERING SOCIETY

THE UNIVERSITY OF TORONTO

ENGINEERING SOCIETY MEETINGS, 1940-41

October 11th

The first Engineering Society meeting was opened by an interesting and amusing performance by Professor John Satterly, featuring his widely popular "Liquid Air Experiment."

October 24th

One of our own Professors, J. L. Rogers addressed the meeting. His very interesting subject "Scientific Methods in Crime Detection" was received with great interest.

November 21st

Mr. J. Breen of The Canada Cement Company was the guest speaker. With the aid of a motion picture he showed how cement for highways and airfields was made. A most interesting film particularly from the standpoint of the civil engineer.

December 13th

The last meeting of the first term. Mr. S. Kuhring of the National Research Council was the speaker. This was a most popular and interesting talk on the "Testing of Aircraft Engines."

January 16th

The meeting was addressed by Mr. Smith of the Ontario Hydro Electric Power Commission. He entertained the students with a very good motion picture on "The Construction of the Beauharnois Transmission Lines."

January 28th

Mr. J. Aykroyd of the Bell Telephone Co. was the guest speaker. With the aid of slides and equipment he described some interesting developments in "Outside Plant Telephone Construction."

CHEMISTRY IN THE WAR

By Professor J. W. Bain, B.A.Sc., F.R.S.C.

In time of war the chemical engineer is called upon to manufacture various kinds of explosives and incendiary materials, to produce poisonous gases and liquids for chemical warfare, to control chemically the quality of many of the metals used in the munitions industry; and in addition, he is expected to assist in maintaining the usual commercial activities of the country by playing the role to which he is accustomed in days of peace.

While it is true that one explosive substance, nitro-glycerine, is manufactured in large quantities in peace time, to be used in the form of dynamite in mines, quarries, and road construction, the onset of war immediately demands the production of at least three other explosives, namely, gun cotton, smokeless powder, and trinitro toluene or TNT.

From the chemical standpoint, the processes by which these explosives are made show a striking similarity in one respect; they all depend upon reactions brought about by a mixture of strong nitric and sulphuric acids. The raw materials in three cases are well known. For nitroglycerine, we must use glycerine, for gun cotton and smokeless powder, we require cellulose—more familiar to us as surgical cotton or pure wool pulp. Without going into the details of the processes used, it may be stated briefly that when glycerine or cotton are subjected to the action of cold strong nitric and sulphuric acids, they show no visible sign of change, but have nevertheless been transformed from innocent and useful friends into substances which are explosive and extremely dangerous. The processes of conversion under the action of the mixed acids are dangerous and demand the utmost skill and caution if accidents are to be avoided; in spite of the experience of decades these unfortunate occurrences are still recorded in our newspapers from time to time.

The glycerine is obtained very largely from fats and oils during the manufacture of soap, and the chemical engineer is charged with the responsibility of preparing a very high grade of this material from the dark and evil-looking liquors from the soap kettle. In another field the cellulose must be produced in a state of high purity either from waste cotton, or from wood; in either case, the

processes must be carefully carried out and controlled, if the product is to meet the exacting demands of the explosive manufacturer.

The raw material for TNT is a colourless liquid known as toluol, which is produced in small amounts when bituminous coal is distilled at high temperatures, as it is for example, in Toronto, for the manufacture of the coal gas which is used so commonly as a fuel.

The substance resulting from the acid of nitric and sulphuric acid on toluol is a yellowish powder, which can be handled without much danger, but which is a violent explosive if suitably ignited. This is the most common of the explosives used to fill shells which are then commonly known as High Explosive. It is never used to propel any projectile from a gun, and this function is usually performed by what is known as smokeless powder of which there are a number of varieties. The cordite with which we are familiar is made from gun cotton and nitroglycerine, worked into a stiff jelly and squeezed out under hydraulic pressure into "cords" of various diameters.

Gun cotton is used in warfare for the demolition of bridges, buildings, and railroads, and is frequently used in "mines" of various kinds. It has practically no peace time uses.

The very important question of the adequacy of the supplies of raw materials for explosive production resolves itself into a study of the sources of glycerine, toluol, nitric and sulphuric acid, the supply of cotton and wood pulp being considered as satisfactory on this continent. Glycerine can now be obtained not only from fats and oils, but also by fermentation, and just recently from petroleum; there is little fear regarding the amount available.

Toluol is, however, somewhat more difficult to procure, although it too can now be produced from petroleum, the process being still in the development stage. There is available a large amount of phenol or carbolic acid from which can be readily prepared a substance known as picric acid. This is a powerful and useful high explosive which is not quite as acceptable as TNT, but possibility of large scale production at a relatively low cost, makes it an attractive second string to the explosive manufacturer. Large quantities of picric acid were made and used in the Great War.

RELAY PROTECTION FOR TRANSFORMERS

By Peter D. Smith

Second Prize Paper delivered at the joint meeting of the Engineering Institute of Canada, Toronto Branch, and the Engineering Society of the University of Toronto on January 16, 1941

The problem of adequate protection for electrical equipment is one which has grown with the industry. The earliest protective device was the simple fuse, which was placed in series with the apparatus it was desired to safeguard. Excessive current generated sufficient heat to melt the fuse metal, and the circuit was opened, disconnecting the fault from the source of supply. As systems grew in size, the current and voltage ranges widened, and the oil circuit-breaker was introduced. The earlier breakers were simply operated on faults by overcurrent in a series trip coil, but as systems became more complicated, and currents went up beyond safe handling values some new method was necessary. It was further necessary to have equipment which would isolate as small a section of the network as possible, to indicate what type of fault had caused the trouble, and in the case of a transient fault to re-connect the equipment to the line.

Instrument transformers and relays were the result of this need. The purpose of an instrument transformer is to give a reduced picture of the true conditions in the primary line at every instant. The current transformer gives a secondary current of 5 amperes, with primary currents from 10 to 10,000 amperes, depending on the ratio. The potential transformer gives a secondary voltage of 110v on primary voltages up to 280,000. The purpose of the relay is to close a set of contacts which operate an alarm, or isolating equipment, when some abnormal condition appears on the system.

Abnormal conditions are evidenced by

(*a*) under-current or under-voltage
(*b*) over-current or over-voltage
(*c*) change of vector relationship of current to voltage
(*d*) rise of temperature.

Through proper design and application, relays are available which operate on any one or a combination of the above factors.

The origin of transformer faults may be classified as external or

internal. External troubles are caused by such factors as lightning, switching surges, overvoltage due to overspeeding of synchronous apparatus, insulation failure caused by moisture, mechanical failure and vibration. Internal faults are inherent defects which involve inadequate design, application of incorrect design principles, improper manufacture or installation work.

The size of the transformer influences the cost and range of the protective equipment applied. The larger power transformers located in generating and sub-stations, for transforming from feeder to transmission voltage, represent a large capital investment. As a result, protective apparatus should be applied.

In order to give satisfactory results against faults in transformers, the protective scheme must not operate on faults external to the transformer, and must be capable of a sensitive setting in order to limit the damage. That is, the scheme must be selective. It must not disconnect a transformer bank from its supply because of trouble on one of the lines fed by the transformer. The protective scheme for the transmission or distribution line must only operate on such. The dropping of the bank under such conditions means a loss of load on the other lines, and a loss of time in searching for trouble where none existed.

Usually it is harder to obtain this selectivity for a relay scheme than it is to reach the desired sensitivity.

Attended transformers in substations are not usually protected against overload. Continuity of service is the governing factor in all system operation, and equipment must be kept on the line as long as possible. Consequently, excess current or temperature operate a relay which sounds a distinctive alarm, warning that such a condition is present. Another transformer bank may then be paralleled by switching, or no action may be necessary if the abnormal condition is caused by a peak load of short duration.

The usual faults for which some protective measures are taken are:

1. *External to the winding*

(*a*) High-voltage and low voltage lead faults, including terminal board and bushing troubles.

2. *Internal faults*

(*a*) Shorted turns—such should be cleared, but this can take a few seconds time without harm.

(*b*) Shorted iron—this does not immediately cause any inconvenience, but will ultimately lead to trouble.

(*c*) Ground faults—these can assume very large proportions and should be instantaneously cleared, within 10 cycles on a 60 cycle timing wave.

(*d*) Phase-to-phase faults—the most serious of all should be instantaneously cleared, within 10 cycles.

The fundamental protective scheme from which many special circuits have been developed, is the simple differential scheme. It is preferable because it is less affected by through short-circuits; and because lower current settings for the relays are possible, thus giving greater sensitivity. It requires current transformers and overcurrent relays only. The underlying principle of the scheme is that in a normal zone of the circuit, the current entering the zone

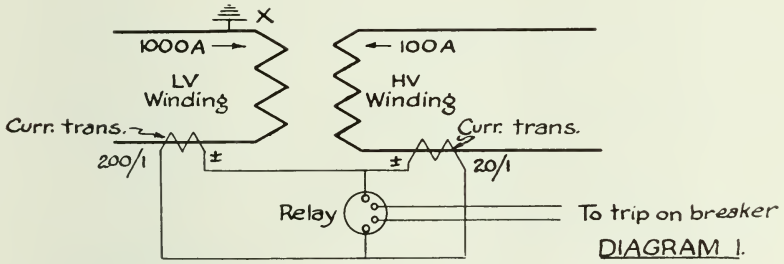


DIAGRAM 1.

has a definite ratio to the current leaving the zone. On this fixed ratio the secondary voltages of a set of current transformers are balanced to have zero current in the secondary circuit, as shown in figure 1. An operating winding of a relay when connected across this balanced circuit will have zero current during the normal power flow conditions upon which the connections are based. Assume a current of 100 amps. on the high voltage side of the transformer and 1,000 amps. on the low voltage side. A proper choice of current transformer rations, 20/1 and 200/1 as shown will result in equal secondary emfs, if the transformer characteristics are similar. By so connecting the windings that the instantaneous emfs oppose one another, under normal conditions there will be zero current in the relay coil. If now a fault, say a ground occurs at X, the ratio of HV side current to LV side current will be altered. As a result the ratio in the relay circuit will be altered, and current will flow, causing the relay to operate, tripping some form of isolating equipment.

This system of protection functions well with excess current relays. These are a type which close their contacts when the current in the relay coil exceeds a certain pre-determined value. The scheme operates on phase-to-phase short circuits, shorted turns, and low resistance ground faults within the protected zone.

There is no interruption in the case of a through short, thus the fault is confined to the smallest possible area. An internal fault, on the other hand, gives a large differential current so that a sturdy relay can produce a sensitive action. The relay required is therefore simple, inexpensive and not likely to get out of order. There are no voltage connections, thus potential transformers are eliminated.

For the sake of simplicity, the diagram shows the single phase connections. The scheme can be applied to polyphase circuits by increasing the number of transformers.

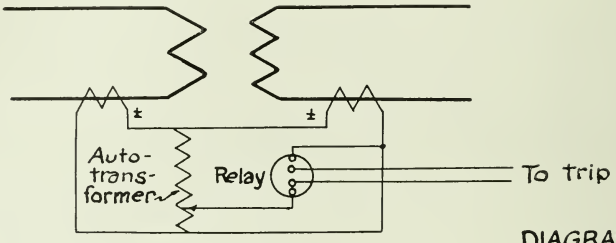


DIAGRAM 2.

Like almost any scheme, such a system has certain disadvantages. For example the switching of a transformer bank or similar load fed by the transformer will create a momentary surge of current in the windings. Known as a transient fault, this peak may be of very short duration, perhaps a few cycles on the basis of a 60 cycle timing wave. Because of unequal current-transformer characteristics, this transient will set up a momentary unbalance in the relay circuit, usually tripping the relay. To prevent operation of the isolating circuit breakers, a time delay is introduced between the operation of the relay coil and the final closing of the circuit breaker trip coil circuit. This definite time delay feature of the order of 30 cycles, may be added by substituting a combination definite time and overcurrent relay. It may also be obtained by using the overcurrent relays with a separate timing relay connected in the contact circuit.

A second shortcoming of the differential current scheme is that it requires a fixed ratio between the HV side current and the LV

side current. With modern tap-changing voltage-regulating transformers this condition is never met. To overcome this fault, balancing tapped auto-transformers are introduced in the relay circuit, as shown in figure 2.

The variable tap on the auto-transformer is so adjusted that the normal secondary current is zero. When the power transformer ratio is altered, either automatically or by hand, a mechanical interconnection also changes the ratio of the auto-transformer. In this way, the normal secondary currents are again balanced.

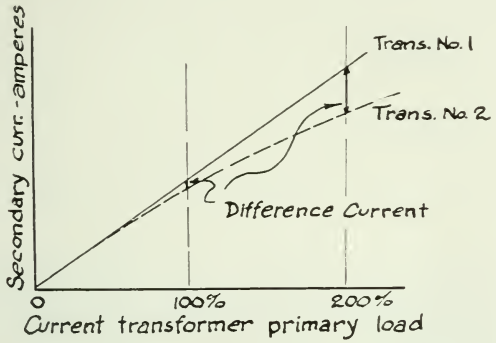


DIAGRAM NO. 3

A third disadvantage of the current differential scheme is that of unequal current transformer characteristics. The high-side and low-side current transformers are usually of different types, having of course, different ratio curves, as shown in figure 3. It is usual to have bushing-type current transformers on the high-voltage side and wound-type transformers on the low-voltage side. The difference of the ratio curves may create a difference of secondary potential which will set up a current in the relay coil. For normal load conditions this may be very low. At 150% load, however, the difference current may be sufficient to trip the relay. To overcome this, a high-ampere tap setting of the relay may be used, but this cuts down the sensitivity of a relay scheme, which means longer time to clear an internal fault.

The best way to eliminate such a difficulty is at its source. That is, the characteristic curves of the current transformers used in a differential scheme should be as alike as possible. Samples of desired characteristics are usually submitted when purchasing current transformers in order to maintain as small a difference as possible.

It may be argued that such elaborate protective systems are unnecessary for power transformers. Certainly transformers are not as frequently in trouble as are, say transmission lines. Phase-to-phase, or phase-to-ground faults, like shorted turns, are rare in their occurrence. Yet a phase-to-phase short of one second duration can cause thousands of dollars damage to valuable equipment. Properly engineered and applied protection should be looked upon as a form of insurance. The usual cost of installation and maintenance is a very small fraction of the value of the equipment protected. The fast clearing of one fault will pay this amply, in money, time, labour and load that might otherwise be lost in repair of the damaged equipment.

THE MINES AND THE WAR

By Prof. C. G. Williams

It is only a few short years ago—speaking geologically—that a man had but to pick up a club or hitch a rock to a shaft with rawhide thong and he was equipped with all the needed munitions of war. How very different are the conditions of to-day. Now, it probably requires the services of more than twenty men and considerably more than that number of horsepower to supply an active service warrior in the field. In modern warfare there are actually some 2,710 motor vehicles with a total horsepower of 172,470 included in one division of 16,000 men, and that is but a small portion of the necessary supplies.

Truly, it is a mechanized war and the pre-requisite of adequate supply is a liberal supply of metal.

What are the Canadian mines doing to supply this vital need and in what spirit are they doing it? At the outbreak of war the producers of base metals in Canada were the first to come forward and offer their entire exportable product to the Empire and at a price below the then depressed market. They made their effort without any attempt to capitalize on the higher price which the increased demand of war inevitably brings.

The tremendous effort our Government has exerted in order to conserve United States exchange for the purchase of munitions in that country is well known to all. The gold mines were asked to do everything possible to provide the maximum amount of gold for this purpose. How well they followed this request may be found in the words of Mr. Ilsley, Finance Minister at Ottawa, who said concerning it, "I am glad to be able to say that the Industry in a spirit of genuine co-operation in this national emergency is endeavouring to produce all the gold it can in order to meet the acute need of foreign exchange for purchasing essential war time imports." The Canadian Gold Mines have actually increased their rate of production some 20% in value since the outbreak of the war. This increase has been made despite the fact that cold business prudence would dictate a policy of holding back their product when so great a proportion of the profits from this extended operation is taken in taxes. Ore is the miner's capital and when he extends his production under these abnormal conditions it is a

direct capital contribution to the cause. Patriotism is triumphing over profit in this case just as surely as in the actions of the base metal miner.

The production of lead, zinc, nickel and copper is so vital to our war effort that the Dominion Government has ceased giving out any detailed information concerning it because they felt that such information might be of some benefit to the enemy. It is no secret, however, that on the whole, these base metal mines have increased their rate of production to a very considerable extent. In addition to this, there has been a diligent search for, and some production of, many subsidiary metals as Cobalt, Manganese, Chromium and Tungsten, which are essential to the production of the alloys which have come to play such an important part in our modern mechanical age. The results of this search are still disappointing but the effort is continuing.

Our industrialists are bending every effort to produce the necessary tools of war. All may rest assured that the Canadian Miners will produce every pound of metal possible to help them in that production, so that our troops may have every essential aid to drive the Hun from our gates and once more establish peace and honour in the nations of the world.

WIND TUNNEL TESTING OF AIRCRAFT

By D. P. MacVannel

First Prize Paper delivered at the Joint Meeting of the Engineering Institute of Canada, Toronto Branch, and the Engineering Society of the University of Toronto, on January 16th, 1941.

The purpose of wind tunnel testing of aircraft is to allow a designer to predict accurately the performance of any particular design by studying the performance of a geometrically similar model. The construction of a prototype and its test flight allows few performance characteristics to be measured, and may result not only in the loss of the plane and the test pilot, but also in the loss of valuable information which might allow the designer to profit from his previous mistakes. Since model testing costs less, is extremely accurate, and allows control of test conditions, it is now considered a necessary stage between design and production.

Airplane design by building, testing, changing, and retesting models is essentially a confession of ignorance. In many matters pertaining to airplane design, it is well to confess ignorance; there is for example, no reliable method of estimating the drag of a complete airplane. In other matters, such as wing characteristics, new model tests in a new wind tunnel are of little value because reliable estimates can be made by the designer using analytical calculations. It is for the solution of the former problems, those which the designer cannot calculate, that wind tunnel testing is used. Various government agencies in North America and Europe have spent millions of dollars determining the significance of model tests and the values of the various correction factors necessary to secure accurate full-scale results. This work has proved quite successful and the methods evolved are now always used to complete the numerous performance characteristics which a designer cannot calculate.

Wind tunnel testing is based on the principle that the forces acting upon a stationary body in a moving airstream are mechanically equal to the forces on a body moving in still air. Thus a stationary model is supported in the moving airstream in a wind tunnel, and the forces acting upon it are measured on compound-

lever balances. Six-component balances are now used quite generally; they measure the lift, drag, pitching moment, yawing moment, rolling moment and cross-wind forces acting upon the model under test.

A wind tunnel may then be defined as an apparatus for driving a uniform airstream past a model at a constant velocity.

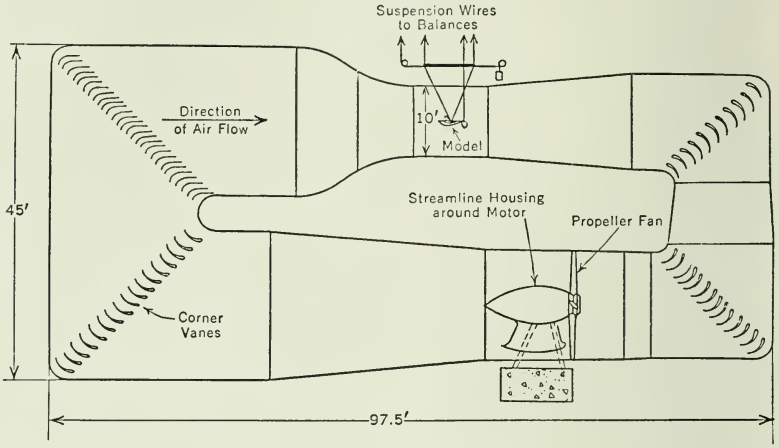


Fig. 1. Diagramatic sketch of a modern wind tunnel.

Figures 1 and 2—Reprinted by permission from "Technical Aerodynamics" by Wood, published by McGraw-Hill Book Company, Inc.

A diagrammatic sketch of a typical modern wind tunnel is shown in Fig. 1. This tunnel is of circular section throughout its entire length and is 45′ x 97.5′. Space and power requirements usually make the initial and operating costs of large wind tunnels capable of good speed very high; their size, and hence the accuracy of their results, varies directly as government grants of money. The rather obsolete wind tunnel at S.P.S. is suitable for testing models up to 3′ in wing span at a velocity of about 50 m.p.h. The National Research Council wind tunnel in Ottawa produces an air velocity of 160 m.p.h. and models 6′ in wing span may be used. An excellent new wind tunnel is being built in Ottawa for larger models and a much higher air velocity. The National Advisory Committee for Aeronautics have an immense wind tunnel for testing full-scale aircraft. The jet of air which acts on the test airplane is 30′ high and 60′ wide, the two return flow channels being in the same horizontal plane as the test jet. The N.A.C.A. also have, at

Langley Field in Virginia, a variable density wind tunnel shown diagrammatically in Fig. 2. The purpose of variable density tunnels will be explained later in this paper. This type of wind tunnel is regarded as the most reliable source of information on aircraft available at the present time. Massachusetts Institute of Technology also have a variable density wind tunnel in which the air is used at up to twenty times atmospheric pressure.

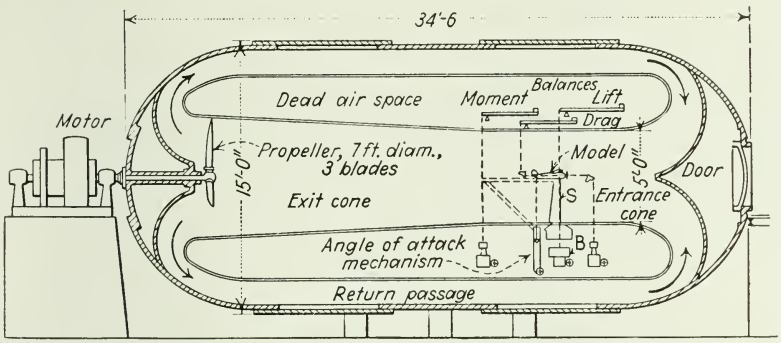


FIG. 2. Sectional elevation of a variable density wind tunnel.

Let us now consider briefly the model theory involved in this work. Since the model is totally surrounded by the working fluid, air, forces due to viscous fluid resistance predominate and Reynold's Law of dynamic similarity applies. Reynold's Law states that for two geometrically similar bodies moving in a fluid, the Reynold's numbers must be equal. Hence

$$\frac{VL}{\nu} = \frac{VmLm}{\nu m} \qquad (1)$$

where no subscript denotes the full-scale craft and subscript m denotes the model. V is the wind velocity, L is any linear dimension, Lm is the corresponding model dimension, and ν is the kinematic viscosity of the working fluid.

The purpose of variable density wind tunnels previously mentioned may be explained here

$$\nu = \frac{\mu}{\rho}$$

where μ is the absolute viscosity and ρ is the mass density of the working fluid. In a variable density tunnel, the density ρ is

increased, decreasing the value of ν. Now if νm be decreased in equation (1), the air velocity past the model, may be decreased and the size of the model, Lm may be increased. That is, a very high full-scale aircraft velocity may be simulated in testing at a lower wind tunnel air velocity using a larger model.

In ordinary wind tunnels

$$\nu = \nu m$$

so equation (1) becomes

$$Vm = V\frac{L}{Lm} = V\lambda$$

where λ is the scale ratio of prototype to model. Thus the air velocity for a model test equals the prototype velocity times the scale ratio.

Now Newton derived this simple formula for the resistance of a body moving in fluid.

$$D = \tfrac{1}{2}\ C_D \rho s V^2 \qquad (2)$$

where D is the drag force or resistance, C_D is a dimensionless coefficient found by experiment, ρ is the mass density of the working fluid, s is the projected area of the body, and V its velocity. Similarly it was found that

$$L = \tfrac{1}{2}\ C_L \rho s V^2 \qquad (3)$$

and

$$M_{(\text{L.E.})} = \tfrac{1}{2}\ C_M \rho c s V^2 \qquad (4)$$

where L is the lift produced on the aircraft, C_L is a dimensionless lift coefficient, M is the pitching moment about the leading edge of the wing, C_M is a dimensionless coefficient and c is the length of the chord of the wing (the mean width of the wing).

From the results of model tests, the three dimensionless coefficients C_D, C_L, and C_M may be found for the drag and lift are measured directly on the balances, M is computed from the wing lift and tail lift values, and ρ, c, s, and V are constants.

Since C_D, C_L, and C_M are dimensionless, they are constant for any size of geometrically similar aircraft. Now if we substitute the full-scale conditions in equations (2), (3), and (4) we can find the lift, drag, and pitching moment of a full-scale aircraft.

For instance, in equation (2), the drag D of a full-scale aircraft equals one half C_D (the dimensionless coefficient found by model tests) times ρ times S (the full-scale projected area) times V^2 (the

full-scale aircraft velocity). Further, the horsepower required for flight, where V is in feet per second, is

$$\text{H.P.} = \tfrac{1}{2}\, C_D \rho s V^2 \times \frac{V}{550} \qquad (5)$$

$$= \frac{DV}{550}$$

From equation (2), the drag varies as the square of the velocity and from equation (5), the power required varies as the cube of the velocity.

For steady motion, the drag of an aircraft equals the thrust of the propeller. Therefore, to obtain the velocity used in the calculations, an engine-propeller combination must be used which will give a thrust equal to the drag.

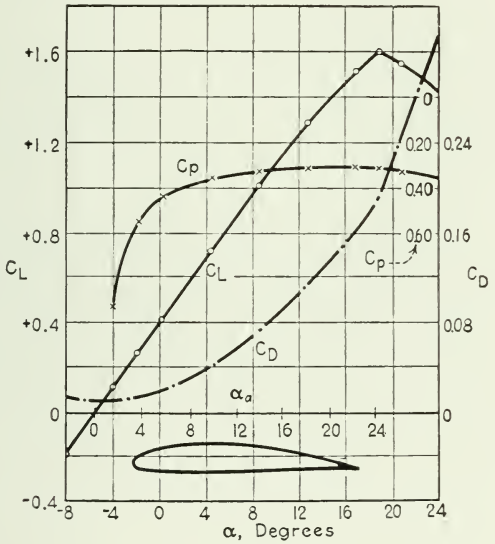


FIG. 3. Characteristic curves of a typical aircraft.

Figure 3—Reprinted by permission from "Handbook of Engineering Fundamentals" by Eshlach, published by John Wiley & Sons, Inc.

The theory and practice outlined above are not nearly as simple as shown here. Numerous corrections requiring accurate judgment and lengthy calculations must be applied to the results.

In wind tunnel testing practice, measurements of lift, drag, pitching moment, etc., are taken at small increments of angle of attack (α), which is the angle between the geometric chord of the

wing and the direction of air flow. A minus angle indicates descent, zero angle indicates horizontal flight, and a positive angle indicates climb. The characteristic curves of a typical aircraft are shown in Fig. 3.

By a study of the characteristic curves and the values they represent, the designer can predict accurately the performance of his aircraft and if it is undesirable, he may modify his design and model and retest it until he obtains the performance desired. The maximum loaded weight of the aircraft for any angle of flight may be found using the values of the lift coefficient C_L. Similarly the power required for any angle of flight may be calculated using the values of C_D, the drag coefficient.

The lift coefficient curve C_L falls off rapidly at about $+19°$ angle of attack. This is known as the stalling angle, which, if exceeded in flight, may result in a tailspin or other peculiar motions for which aircraft are noted.

The centre of pressure curve, C_P, shows where the resultant of the lift forces acts aft of the leading edge of the wing. For instance, from the C_P curve in Fig. 3, the resultant of the lift forces in level flight acts about half-way between the leading edge and the trailing edge of the wing. This curve is of value in the structural design of the wing. Numerous other performance characteristics can be calculated from these characteristic curves, such as maximum speed, cruising speed, take-off and landing speeds, and rate of climb.

The paths and velocities of the airflow about sections of the surface of an aircraft can be determined in wind tunnel tests by connecting a series of holes in the surface to a multiple manometer. Each tiny hole acts like a pitot tube and from the differential pressure readings, a pressure distribution curve can be plotted. From this curve, the paths and velocities of the airflow may be deduced.

Wind tunnel tests also serve to show the adaptability of various appendages, such as skiis, floats, or gun-turrets to existing aircraft.

We might say in closing, that the future development of aircraft lies in wind tunnel research. However, at the present time, the biggest difficulty is the lack of sufficiently powerful engines for the creations that have been developed by experts through wind tunnel research.

THE 1923 ENGINEERING ALUMNI BURSARY
THE WOMEN'S MINING ASSOCIATION BURSARY

The graduate class of 1923, and the Women's Mining Association have each kindly presented Bursaries to the Faculty of Applied Science and Engineering. To these two associations the Faculty owes many thanks for the tangible interest shown in offering opportunities for the advancement of scholastic and general ability.

The 1923 Engineering Alumni Bursary is awarded annually to a student completing the second or third year; it may be awarded two years in succession to the same student but will usually be awarded at the completion of second year.

The Women's Mining Association Bursary is awarded to a student entering the third or fourth year in the Department of Mining Engineering, Metallurgical Engineering, or Mining Geology; it may be awarded two years in succession to the same student but will usually be awarded at the beginning of the third year.

Each of these bursaries, having the value of one hundred and fifty dollars annually, commencing 1939, will be awarded to the students selected by committees of the respective organizations, on the following basis.

(*a*) In addition to mental capacity, the student must show leadership ability and give promise, through his activities, of becoming a worthwhile influence in the affairs of the profession and the community.

(*b*) While attention is given to scholastic ability, as evidenced by his academic standing, it is not the governing factor. He must, however, stand in the top quarter of his class.

(*c*) Special consideration is given to financial need.

Applications must be made to the Secretary of the Faculty within one month of the opening of the academic year.

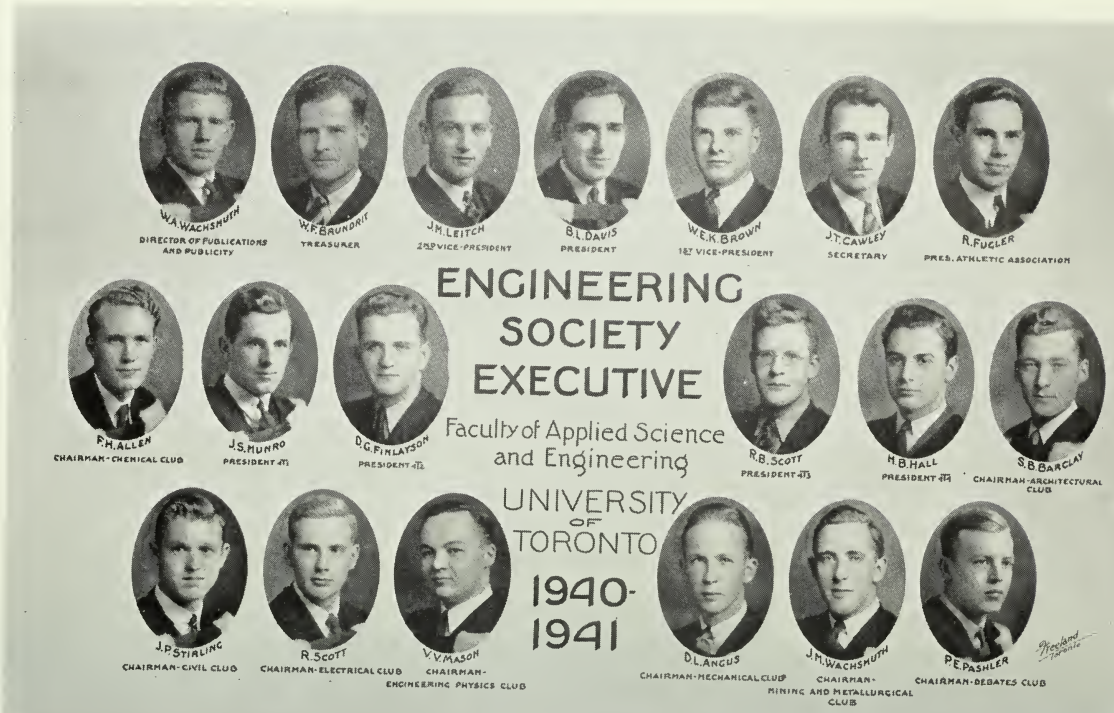
LAST CALL
for
SCHOOL
DINNER

YEAR BOOK
1941

EXECUTIVES, CLUBS, FUNCTIONS,
ETC.

ENGINEERING SOCIETY

THE UNIVERSITY OF TORONTO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Faculty of Applied Science and Engineering
UNIVERSITY OF TORONTO
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CHAIRMAN-MECHANICAL CLUB
J.H. WACHSMUTH
CHAIRMAN-MINING AND METALLURGICAL CLUB
P.E. PASHLER
CHAIRMAN-DEBATES CLUB

ELECTIONS—1941

The School elections this year were carried out in traditional style. The nominations were quiet, and names of the unfortunate candidates were posted on a large chart outside the Engineering Society Supply Department.

After the nominations had been closed, the campaigners descended upon us like locusts, subjecting the freshmen especially to gems of oratory and entertaining tales of achievement. The imagination was stirred as visions of Utopia to be, "If I am elected," were skilfully unfolded.

C-22 bulged and overflowed with a throng of vengeful Schoolmen on speech day. It was their chance to even things up. Heckling in its best and worst forms made many a brave candidate tremble and shake. But, we must admit, they were men.

Signs, pictures, and "art" as it is understood by engineers made its appearance on every available wall in that well loved fire-trap, famous in song and story, the Little Red School-house.

Election day dawned dull and cloudy and as expected, showers of blotters descended upon us. One enterprising candidate replaced the usual examination blotters with his own propaganda filled missives at the desk of some who were unfortunate enough to be writing a test on this historical day.

At twelve o'clock, midst the boom of cannon, and the skirling of pipes, the parade to Hart House got under way. In the Great Hall we were treated to an adequate meal, and music a little less adequate perhaps, but loud enough to drown out the death rattles of the starving men who could not get in. The music emanated alternately from the pipes of three sad and lonely Highlanders and the instruments of a band of musically inclined Schoolmen, brought together by one of the candidates who was under the false impression that they would further his cause. It seems that a little more food was consumed in the natural manner this year and less used in the form of munitions.

The well fed Toike Oikers, their hunger satisfied, trooped back to School in time to "Exercise lungs and franchises."

From there a migration took place southwards with frequent halts at various establishments purveying liquid refreshment, and ending eventually at the "Queen Street Opera"—that stronghold of culture and refinement. The audience co-operated in an un-

usual fashion with the cast, the highlight of the show being a speech by the newly elected president.

After the show an unofficial parade toured the downtown streets in spite of well meaning guardians of the law.

And so another memorable election day drew to a close.

ENGINEERING SOCIETY

Engineering Society Executive

President	W. F. Brundrit
1st Vice-President	J. R. Gundy
2nd Vice-President	J. T. Cawley
Treasurer	J. N. Dickie
Secretary	H. Hall

Athletic Association Executive

President	H. J. Barrett
Vice-President	W. Henry
Secretary-Treasurer	D. Grosskurth (Accl.)

Executive 4T2

President	J. P. D. Rogers
Vice-President	K. Kidd
Secretary-Treasurer	D. Allan (Accl.)
Athletic Representative	W. L. Bland

Executive 4T3

President	W. A. Moeser
Vice-President	R. F. Lewarne
Secretary-Treasurer	G. R. Heffernan
Athletic Representative	R. C. Quittenton

Executive 4T4

President	J. Ward
Vice-President	J. D. Abell
Secretary-Treasurer	W. G. Kingsmill
Athletic Representative	W. W. Moffat

Club Chairmen

Civil Club	W. S. Glynn (Accl.)
Mining and Metallurgical Club	V. H. Smith (Accl.)
Mechanical Club	D. J. Parrish (Accl.)
Architectural Club	C. F. T. Rounthwaite (Accl.)
Engineering Physics Club	C. B. Livingston (Accl.)
Industrial Chemical Club	E. Bonham
Electrical Club	K. A. Buchanan

Permanent Executive—4T1

President	A. L. Maclean
Vice-President (2)	B. L. Davis
	J. S. Munro
Secretary-Treasurer	J. D. Barnes
Councillors	J. P. Stirling, Dept. 1
	A. A. Baker, Dept. 2
	A. Capel, Dept. 3
	S. Barclay, Dept. 4
	P. E. Pashler, Dept. 5
	F. H. Allen, Dept. 6
	J. W. Simpson, Dept. 7
	J. M. Wachsmuth, Dept. 8

Bronze "S" ..... J. S. Munro

PRESENTATION TO THE DEAN

By B. L. Davis, on the occasion of School Dinner, 1940

To-night fellows, we have a sorrowful job to perform. It is to bid a formal adieu to our good and faithful friend, Dean Mitchell. I would like to be able to put our innermost thoughts of the high esteem in which we hold the Dean, into words, but no words that I can think of are adequate.

It would be nice at this time, Dean Mitchell, to enumerate the many things that you have done for your country, but on account of lectures to-morrow morning at nine, there isn't time to do so. You are a great figure in this country, sir, a model to every one of your young gentlemen that register in this Faculty that we pride so highly. I would like to speak, sir, not of Brig.-Gen. C. H. Mitchell as the world knows him but of the Dean, the engineer's friend.

When we came here as freshmen, and were huddled together up into the First Year Drafting Room, not knowing exactly what to do, a gentleman got up and made a speech. We immediately

recognized in this man a friend, one in whom we could confide. In his speech, the Dean, for that of course is who it was, impressed us with the non-partiality shown to students from all different walks of life. Here we were, practically all strangers, being united as a Class of S.P.S. by the Dean.

The Dean took this freshmen class, as he took them all—helped them when in trouble, inspired them when in dejected moods, and literally sparked them on until they were Engineers under the well-known Mitchell Banner, which is so prominently displayed here to-night.—"Every Engineer is by Nature an Economist!"

The Dean has made a great Faculty out of S.P.S. The green-tied individuals of yester-year are now Engineers in industry throughout the length and breadth of the country.

At the close of this School year, the Dean retires. He will then devote all of his time to war work, in which he is so capable.

We will miss him, yes. But even in his retirement he is a model good citizen. May God grant that his war work leads to a successful ending. Will you rise, Dean Mitchell, please. I have here an Engineering Society Gold Key. The graduating members of the Engineering Society Executive as you know, receive these. We are pleased to see you graduate with the Class of 4T1 after twenty-two years of hard labour. Your key is engraved "The Chief Schoolman" on account of your length of service.

We have here, sir, an engraved cigarette case for your home, and one for your personal use, the engraving on which reads:

Presented to

DEAN CHARLES HAMILTON MITCHELL,
C.B., C.M.G., D.S.O., C.E., LL.D., D.Eng.

on his retiring from the

Faculty of Applied Science and Engineering

of the University of Toronto

by the Undergraduates of the Faculty

as a token of their respect and esteem.

Thursday, 21 November, 1940.

ADDRESS BY DEAN C. H. MITCHELL

AT THE 51st ENGINEERING SOCIETY DINNER IN HART HOUSE, THURSDAY EVENING, NOVEMBER 21st, 1940

On the occasion of the announcement of his approaching retirement by President Cody, and on presentation to him by the Undergraduates of The Faculty of Applied Science and Engineering of the "School" Gold Key (inscribed "Chief Schoolman 1919-1941") and Silver Cigarette Box and Cigarette Case.

I thank you; thank you; thank you, for the kind words you have spoken, Mr. President, and for the resounding tributes you have all paid to me. I thank you for these beautiful testimonial presents you have made me, and in behalf of my wife for the flowers which your Committee sent her to our home this afternoon. I am at a complete loss what to say.

I am looking at this unique Menu Card with the artistic cover page having the clever device by which you have combined the numbers of the Annual Dinners of your Society from the 29th when I first came here as your Dean, to the present historic one, the 51st. Thank you again!

I came here prepared to make a short speech of another kind. I had intended somewhat to explain what I wrote for "Toike Oike" for this occasion.

I wished to say something more about Buoys and what they mean to us as we navigate the rough and winding channels of life and our great Engineering Profession. I wished to say how we value the buoys that we have to steer by—The President of our University, and the eminent speaker who will shortly follow—Mr. Ferguson—I have admired him for a long time as a buoy and I knew him a long time ago as a boy at College (and believe me he *was* a boy!).

I also wished to remind you that you have sure, steady, safe buoys all about you in your Professors—buoys of all kinds, spar buoys, sprice buoys, bell buoys, flashing buoys—and perhaps some of you may add gas buoys!! (If lady undergraduates had been here they might be Belle Buoys and Flashing Buoys.)

Among the things I wished to speak of in connection with your navigation was that whatever we may do in this famous "School", in addition to training engineers, we try to make *men—real* men, tall men, strong men, who can cut through a fog and weather a storm. You know the old English adage "Rough weather makes good sailors".

But now you have made me change my course. I must veer to another channel, an unbuoyed one, which has opened up with a new view, a channel where I shall have to go ashore, stop and look at the view. I shall have to stand and look back for twenty years and more.

It is a long way we have come these twenty-one years. It will be twenty-two years when I leave you next spring. There have been rough places on the road and on the water, for there have been many rivers to cross—some of them difficult.

It grieves me to think that I shall leave you, but I shall watch you from a distance as you march and sail along. It will not be such a hard way for you as it was for your predecessors—I hope not. (The curriculum is likely to be shorter at any rate.)

I came in with the famous Class of 1923 and we were freshmen together. We had all just come back in 1919 from the Great War. (Mr. Wingfield '23, President of the Engineering Alumni who is here tonight at the head table is one.) We were full of energy and hope for a new kind of world—a world where Engineers would be wanted more than ever to help build up our Canada.

Now I shall go out with the great Class of 1941, which will be leaving here with this new war really started in terrible earnest. We all shall have to face a new and changing world again. To you—the graduating class—I say I shall be proud to "graduate" with you and go out with you to help fight in this new war. We will fight and fight hard and we will win! I am as proud to go out with you as I am proud to have come in with the Class of 1923. I am sure you will become as famous as your predecessors of twenty-two years ago.

To you of the other three years who will remain, what can I say? You will be a part of another thousand young engineers next year in the "Old School". To you *we* of the Graduating Class will hand on the torch to keep the home fires burning, to keep alive the flaming spirit of the "Old School". You, too, will duly take your places along with the graduating classes which have gone before and will become great engineers and builders of the Canada for which we are now fighting.

As I come to the end of the long road and voyage and to the last river to cross, I am reminded of a fanciful poem given me many years ago by a famous bridge engineer. It portrayed a long line of pilgrims crossing a deep river and on the far side there was a group of old engineers building a bridge:—

THE BRIDGE BUILDERS

"Old man" said a fellow pilgrim near,
"Why labour so hard in building here?
You never again will pass this way
Your journey soon ends with the closing day.
You have crossed the river so deep and wide
Why build you this bridge at even-tide?"

The old builder then lifted his proud gray head,
"Good Friend, in the road we've come", he said,
"There followeth close after us today,
Young men whose feet must pass this way.
This river that has not been too hard for me,
To these fair young men may difficult be;
We hope they may cross in some easier way,
Its for *them*, we've been building this bridge today."

Gentlemen! Again I thank you from the bottom of my heart. Au revoir! Good luck to you and God bless you.

GIRLS OF S.P.S.

G. M. Wagar, A. E. Rushbrook, A. M. R. MacCorquodale, S. M. L. Macdonnell, M. J. Stewart, A. A. Ayer, J. D. Taylor, E. C. Jones.
Absent: M. Synge, M. L. Imrie, S. B. MacDonald.

GIRLS OF S.P.S.

Feminine Pulchritude, which relieves the monotony of labs and lectures at the Little Red Schoolhouse, once again deserves mention in our Year Book. Although in the past, matrimonial pitfalls have thinned their ranks, the number of girls enrolled at School is as large as ever. Since 1920, thirteen have traversed the paths that lead to a degree in Engineering. We have been informed that all have been successful in one way or another.

Although none of the girls now enrolled at S.P.S. are due to graduate this year, they are all working manfully to attain this distinction as soon as possible.

The happy day comes in 1943 for Marty Stewart, when she completes her five year course and becomes a full-fledged architect.

Soon after the spring of 1943 we may expect some new and startling developments in the field of chemistry. Those two beaker beaters Claire Jones and Audrey Rushbrook, will receive their diplomas.

Sally Macdonald is working toward a degree in Engineering Physics in the same year. Industry, beware!

And now we introduce the newcomers. Jean Taylor in Third Year architecture, comes from Sussex, England. Having been stranded in Canada at the outbreak of the war, she wisely chose to continue her studies at S.P.S.

Alone in her glory is Mary Imrie, Second Year architecture. She comes to us all the way from the University of Alberta. When her course was discontinued there, she came east.

In First Year architecture we find, much to our delight, Alice Ayer from Vaughan Road and Oakwood Collegiates; Shelagh Macdonnell from St. Clements, and Pegeen Synge from North Toronto.

It seems that Department 6 also has its share of freshettes. Peggy MacCorquodale from Malvern, and Gertrude Wagar from Bowmanville, both intend to become Chemical Engineers.

We would like to thank the Enginettes for giving us the information that we required to write this article. They were a little coy at first, but responded favourably to kindness. We have found, however, that the easiest way to obtain any information regarding phone numbers is to buy a directory.

THE CANADIAN RED CROSS NEWS SERVICE

Written especially for the University of Toronto Engineering Society, TRANSACTIONS AND YEAR BOOK.

As each successive month of war finds Britain more hampered by indiscriminate bombing, the function of the Canadian Red Cross has been like that of a life-giving artery, constantly pumping encouragement and hope and a never-ending stream of supplies from this young and vigorous country to a harried parent nation.

Every air raid means more emergency relief work and every air raid threatens and hinders those agencies now serving the suffering Britishers. And so the story of the Canadian Red Cross since war began, and particularly since the blitzkrieg, has been one of increased responsibility, of answering every emergency call immediately, and of anticipating disaster before it has been inflicted by the enemy. Since the declaration of war, and through the voluntary support of the Canadian people, supplies overseas were amassed in such staggering quantity that when Nazi planes crossed the Channel to rain their horroro n English civilians, the Canadian Red Cross warehouses were amply stocked to relieve the suffering of the wounded and homeless.

Recently an even greater task was taken over by Canadian volunteers. Since the beginning of January, 10,000 boxes of food have been packed in Toronto every single week for British prisoners of war in Germany. The British Red Cross, harassed by air raids, is still sending parcels from depots as yet undamaged by bombs. But Canada was asked to take over a large part of the work and hand picked volunteers are packing the boxes at the rate of approximately 2,000 a day.

Overseas, the aid given by Canada continues and increases daily. Shipments to England from September, 1939, have reached the stupendous total of more than eight million articles including hospital and surgical supplies, woollen comforts, blankets, hospital equipment, food and so forth. And ever since the first bomb was dropped, the Canadian Red Cross in London has released food, clothing and blankets to bombed civilians.

These materials are being amassed continuously but there are also the emergency supplies to be considered. When the British Red Cross cabled for anti-tentanus serum to prevent lock-jaw among air raid victims, a reply guaranteeing 50,000 packages was despatched the same afternoon.

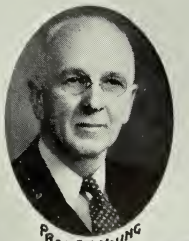
In England, the Canadian Red Cross Hospital (known as No. 5 Canadian General Hospital) was built and equipped for 600 beds, and much aid was given in equipping No. 15 Canadian General Hospital. Canadian soldiers invalided in hospitals anywhere in England or Scotland are always surprised and delighted by the appearance of Canadian Red Cross Hospital visitors who have been keeping in touch with sick soldiers since Canadians first went overseas. The visitor gives the sick man the care he would get at home among his own family and friends. She takes him his home town newspapers, writes his letters, procures his comforts. Woollen articles and supplies for troops have been released regularly; 150 ambulances have been sent to the British Red Cross; 20 ambulances and seven station wagons turned over to the Royal Canadian Army Medical Corps for use in Britain and 27 ambulances given to the R.C.A.F. in connection with the Empire Training scheme.

Money and supplies have been going to Greece just as Poland and Finland, in the early stages of the war, were aided by the Canadian Red Cross.

On the home front the comfort and welfare of troops in training has been a major concern and this work has spread all across Canada and finally to Newfoundland where Canadian boys are stationed. An assistant National Commissioner is located there to report the needs of the army and keep headquarters informed of demands for woollen comforts and supplies. At Eastern seaports the Canadian Red Cross maintains a 24-hour watch at piers where ships arrive so that sailors needing warm clothing or victims of sea disaster wanting medical attention may be given every assistance. A nation-wide chain of blood clinics has now been undertaken and great quantities of frozen blood will be going Overseas for transfusions.

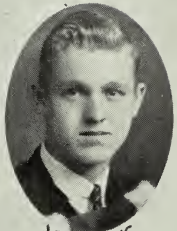
In 10,000 branches and groups across Canada, nearly one million women volunteers are working for the Canadian Red Cross, an expression of their service and loyalty to those in the front line overseas. Winter and summer the piles of knitted and sewn garments never cease to grow. Women have also engaged in other Red Cross projects such as transport and ambulance driving, first aid and home nursing, office administration and, recently, in emergency wartime feeding.

Peace time work has not been neglected even though war demands have reached gigantic proportions. Outpost hospitals still function in remote regions of Canada, home nursing continues and the Junior Red Cross has a membership almost at the million mark.



PROF. C. R. YOUNG
HON. VICE-CHAIRMAN

W. STORRIE
HON. CHAIRMAN



J. P. STIRLING
CHAIRMAN

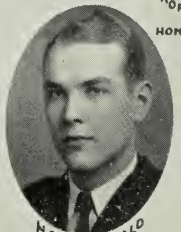
PROF. W. M. TREADGOLD
HON. VICE-CHAIRMAN

R. WARDELL
VICE-CHAIRMAN

CIVIL CLUB EXECUTIVE

Faculty of Applied Science
and Engineering
UNIVERSITY OF TORONTO

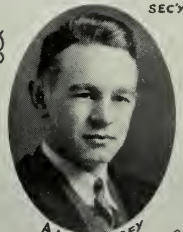
1940-1941



H. E. ARCHIBALD
SEC'Y-TREAS.

W. D. RAMORE
4TH YEAR REP.

W. S. GLYNN
3RD YEAR REP.



A. McCOUBREY
2ND YEAR REP.

Freeland Toronto

R. A. RITCHIE
1ST YEAR REP.

CIVIL CLUB

Once again the time has come to recount the year's activities of the Civil Club.

We have always felt that one of the most important services that the departmental clubs render, is to introduce the freshmen to the upper years, and to give them some small glimmering of certain phases of engineering work. This year the executive was greatly encouraged in this endeavour by the enthusiastic support that the freshmen gave to every activity.

The season commenced with an initiation dinner in the Great Hall of Hart House, during which the executive and the members of the staff were introduced to the incoming men. At this first meeting, the members very appropriately listened to the broadcast of the speech by Dr. T. H. Hogg on "Engineers in the War Effort."

On the 29th of October, the Club made its annual field trip to the plants of the Cooksville Company and the Hamilton Bridge Company. In the evening, the members were entertained by the Hamilton Bridge Company at a dinner followed by brief addresses. After this the Civils were turned loose on the town.

Two speakers at Club Smokers during the fall term were Mr. R. Lemire of the Transmission Department of the Ontario Hydro, and Mr. Wm. Storrie, the Honorary Chairman of the Civil Club.

Mr. Lemire gave a colourful address on the construction of power lines in Northern Ontario. Mr. Storrie presented a most interesting and valuable talk on "Tendering on Public Works."

In the early days of January, the Civil, Mining and Metallurgical Clubs held a joint "Exam Dance" which was a success from every point of view.

Two more meetings are still to come, before the term ends. The first of these is to take the form of a combined smoker with the Forestry Club. Mr. W. J. Leclair of the White Pine Bureau has been engaged as the guest speaker.

At this time, the executive wish to acknowledge the whole-hearted support of all the students and especially the interest shown by our Honorary Chairman, Mr. Storrie, and the members of the staff.

John P. Stirling,
Chairman.

W.V. SMITH
SECY-TREAS.

PROF. C.B. LANGFORD
A.I.M.E. SPONSOR

R.N. PARKINSON
VICE-CHAIRMAN

J.M. WACHSMUTH
CHAIRMAN

J.H.C. WAITE
HON. CHAIRMAN

C.W. KNIGHT
COUNCILLOR

C.S. WILLSON
4TH YEAR MINING GEOLOGY REP.

J.W.E. BERRIDGE
3RD YEAR MINING REP.

E.L. HEALY
4TH YEAR MINING REP.

MINING AND METALLURGICAL CLUB EXECUTIVE

Faculty of Applied Science and Engineering

UNIVERSITY OF TORONTO

1940-1941

F.J.E. LOCKHART
4TH YEAR METALLURGY REP.

W.A. MONTGOMERY
3RD YEAR METALLURGY REP.

J.A. KING
1ST YEAR METALLURGY REP.

R.R. HOLMES
2ND YEAR MINING REP.

H.W.W. BUCK
2ND YEAR METALLURGY REP.

W.O. TURNER
1ST YEAR MINING REP.

MINING AND METALLURGICAL CLUB

Another short packed year has gone. The club has completed one more successful campaign in its effort to bring the Mining and Metallurgy undergraduates into physical and mental contact with prominent graduate engineers.

We had a real "do" last fall in the form of an invitation smoker, where the freshmen were introduced to the wise seniors, juniors, and sophomores. I here and now congratulate you first year fellows for the splendid way you entered into the spirit of the evening.

Around the middle of November the fourth year miners and metallurgists took a bus ride to Orillia, the home of three very hospitable mining and metallurgical companies. The tours through the plants were highly instructive, but the feature of the well-spent day was our association with a really fine group of business men.

Then on Tuesday, December 5th, we had our first dinner meeting at the Engineers' Club—courtesy of Professor C. G. Williams. Our Honorary Chairman, Mr. J. H. C. Waite gave a very good talk on "Exploration Engineering."

The Arcadian was the scene of a joint Civil, Mining and Metallurgy Club dance on January 9th, 1941. The idea of an inter-club party is a good one, and should therefore be made an annual affair.

On January 28th we had our second dinner meeting, again at the Engineers' Club. Mr. J. G. Morrow, the Chief Metallurgist of the Steel Company of Canada talked to us about various problems facing the steel industry of Canada. His statements aroused a good deal of interest, for he was literally bombarded with questions after the meeting proper, and had to be torn away just in time to catch the Hamilton train.

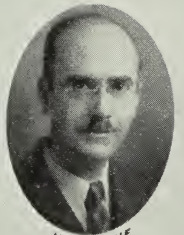
The program outlined above was made possible by the relentless interest of Professor C. G. Williams and Mr. N. F. Parkinson. Our Honorary-Chairman, Mr. J. H. C. Waite, our Faculty Sponsor, Professor G. B. Langford, and our Councillor, Mr. C. W. Knight, did a fine job which is greatly appreciated. Also may I thank Van Smith, the Committee, and you fellow members for your enthusiasm, interest and co-operation throughout the year.

Van H. Smith, your Secretary-Treasurer for 1940-41, did a good job and was justly chosen as your leader for next year. I feel confident that you will give him your hearty support. deserves.

JOHN WACHSMUTH,
Chairman.

PROF. R. W. ANGUS
HON. VICE-CHAIRMAN

D. L. ANGUS
CHAIRMAN



H. C. CRANE
HON. CHAIRMAN

PROF. W. G. MCINTOSH
HON. VICE-CHAIRMAN

MECHANICAL CLUB EXECUTIVE

Faculty of Applied Science and Engineering

UNIVERSITY OF TORONTO

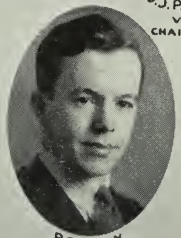
1940-1941

P. DEWAR
SECY-TREAS.

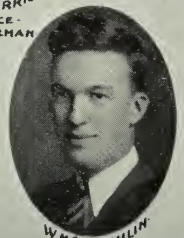
D. J. PARRISH
VICE-CHAIRMAN

B. F. BOOTH
4TH YEAR REP.

D. W. KNOWLES
3RD YEAR REP.



P. GORDON
2ND YEAR REP.



W. MCLAUCHLIN
1ST YEAR REP.

Pyperland Toronto

MECHANICAL CLUB

The elections are now past, and although they were early this year because of the early ending of the spring term, they mark the close of another year of Club activities.

Unfortunately due to present conditions, several of the usual activities of the Club could not be held this year. The first, second and fourth years were unable to have their usual field trips because of government restrictions. The meetings too, had to be limited because of the shortened terms for the two final years.

The first smoker was very successful—a talk by Professor R. W. Angus our Honorary Vice-Chairman; some accordion music, and a gigantic cigar smoking contest (won by first year) all helped to make a very successful evening.

The second meeting was held in conjunction with the student branch of the A.S.M.E. and was held as a luncheon meeting in Hart House. The speaker on this occasion was Mr. A. D. Smith of the Foster-Wheeler Co., who gave a very interesting illustrated address on "Pulverized Fuel Boilers."

The Annual Dance was held at the Arcadian with the Electrical and Engineering Physics Clubs. The accuracy with which a budget may be laid out was well illustrated by this event which returned a profit of something under a half a dollar to the three Clubs. However, a rather less accurate budget might save the cost of dyeing the white hair of the committee members.

Plans for the annual dinner are now practically completed, and a very successful meeting is expected. Mr. H. C. Crane, our Honorary Chairman, will be the guest speaker, and some other entertainment is being lined up.

Don Parrish has been elected by acclamation for the Club Chairman next year, and under his very able guidance the Club may be expected to take an important step forward if some of the restrictions caused by the war do not interfere.

The Executive wish to thank Professor Angus and Professor McIntosh for their assistance in all matters that were referred to them; and also Mr. H. C. Crane for acting as Honorary Chairman.

Donald Angus,
Chairman.

W.T.SIU
5TH YEAR REP.
F.LESSARE
HON. CHAIRMAN
S.B.BARCLAY
CHAIRMAN
C.F.T.ROUNTHWAITE
VICE-CHAIRMAN
R.C.FAIRFIELD
SEC'Y-TREAS.
W.SHULMAN
4TH YEAR REP.
K.A.CAMERON
3RD YEAR REP.
L.G.BAKER
2ND YEAR REP.
S.MACDONNELL
1ST YEAR REP.
ARCHITECTURAL
CLUB
EXECUTIVE
Faculty of Applied Science
and Engineering
UNIVERSITY
OF
TORONTO
1940-1941
Freeland
Toronto

ARCHITECTURAL CLUB

It seems incredible that five years have slipped by. Yet, they have. Five years ago it would seem incredible that I would be chairman of a group of such inspiring and co-operative students. Yet, it is so. Thanks to the Architectural Club for a splendid conclusion to a university career.

Let us glance in retrospect at the past year. There we were last fall all up at Gull Lake sketching with Mr. F. H. Brigden, the well-known artist, as our guest. I, for one, got a new slant on this business of water-colour drawing. Say, do you remember the midnight walks and the cow chasing Bud Morley over the fence?

Then the Club returned to the "studio" and laid plans for the coming year which were to include talks on modern materials and visits to jobs.

It started to carry out its plans with a talk on modern architecture by Dr. E. Faludi. This was followed in rapid succession by a trip to a modern house under construction and another house of colonial tendencies. A skiing trip to Aurora which went under the guise of studying the Early Ontario Architecture of that district, ended disastrously when Professor Arthur plunged feet first into a snowbank and shattered his knee. He is still hobbling around and can tell when it is going to rain. The Club sincerely hopes that he will soon recover. Then an interval of time elapsed with nothing extraordinary happening. The plans were beginning to flag. Finally a talk on plywoods was given by Mr. A. H. Copeland. This was probably the most practical and interesting speaker that this Club has had in five years. Then came the New Year and planning for the Club Banquet.

In its spare time the Club produced three exhibitions. Ambitious, it must be admitted, but worth while since they acquaint the public with what architecture really stands for.

Last year the girls invaded our draughting studio. This year it was the army with nearly the whole department in uniform. We wish Col. Waters the very best of luck—as the second of the staff to leave on active service.

Our Honorary Chairman deserves a vote of thanks for the interest he has taken in the Club.

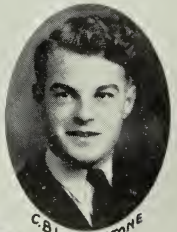
In conclusion, we two who are about to graduate wish you all good luck, and cheerio . . . .

STANLEY B. BARCLAY,
Chairman.

H. A. REID
SEC'Y-TREAS.

PROF. R. F. LEGGET
HON. CHAIRMAN

V. V. MASON
CHAIRMAN



C. B. LIVINGSTONE
VICE-CHAIRMAN

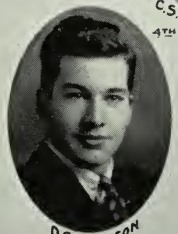
C. S. DINSMORE
4TH YEAR REP.

ENGINEERING PHYSICS CLUB EXECUTIVE

C. MUIRHEAD
3RD YEAR REP.

Faculty of Applied Science
and Engineering
UNIVERSITY OF TORONTO

1940-1941



D. S. JOHNSON
1ST YEAR REP.

I. R. LOUNSBURY
2ND YEAR REP.

Freeland
Toronto

ENGINEERING PHYSICS CLUB

As has become the custom during its four years of existence, the Engineering Physics Club started off the school year with a banquet, followed by "special entertainment" for the freshmen. Just prior to Christmas the social event of the season took place in the form of a joint dance sponsored by the Electrical, Mechanical, and Engineering Physics Clubs.

This year the executive was again faced with the problem of obtaining speakers interesting to all options. This has driven the club to favour speakers on general subjects such as "The Present European Situation" and "The Human Nervous System" or technical subjects of universal interest, such as "The Problem of the Bomb Sight," "The History of Electrical Units," "Modern Developments in Alloys" and "Unusual Sources of Power."

An innovation this year was a second dinner meeting. This was held at Diana's, with Mr. O. W. Ellis of the Ontario Research Foundation as guest speaker. Another new and different thing tried out at this same meeting was having several of the recent graduates talk on their experiences since graduating. This proved to be very entertaining and, it is hoped, of use to the men of First and Second years, with regard to their choice of options.

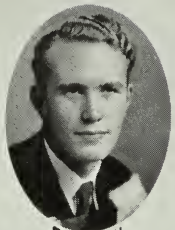
Professor Loudon, who was the Honorary Chairman of the Club during the first three years of its life, is now in Montreal with the R.C.A.F. Hence it was necessary to turn elsewhere for an Honorary Chairman, and the choice fell on Professor R. F. Leggett who is giving Professor Loudon's lectures to the first two years, and who has to date given some very welcome advice to the executive.

One of the original aims of the club, namely to familiarize men of industry with the Engineering Physicist and his worth, has apparently been well accomplished, if we judge by the positions offered to this year's graduating class. This, perhaps, is one of the reasons for its growing popularity as evinced by the record-breaking First Year enrolment of 31 men.

The past year has brought increasing difficulties with regard to meetings due to the time taken by military training. It is likely that this condition will have to be coped with again next year, but perhaps by that time the recommendations for less time in labs and lectures, and more for individual "thought" will have come into effect and will obviate the present time shortage.

V. V. Mason, *Chairman.*

W.A. WACHSMUTH
VICE-CHAIRMAN



F.H. ALLEN
CHAIRMAN

E.J. TYRRELL
HON. CHAIRMAN

PROF. E.G.R. ARDAGH
HON. VICE-CHAIRMAN

E. BONHAM
SEC'Y-TREAS.

INDUSTRIAL CHEMICAL CLUB EXECUTIVE

Faculty of Applied Science and Engineering

UNIVERSITY OF TORONTO

1940-1941

A. FARQUHAR
3RD YEAR REP.

W.G. KINGSHILL
1ST YEAR REP.

A. GORMAN
1ST YEAR REP.

Freeland
Toronto

INDUSTRIAL CHEMICAL CLUB

World War II struck a sinister note in the activities of the Club this year. The annual trip for the Third and Fourth Year men had to be foregone entirely, after several attempts, because wartime restrictions prohibit visitors to chemical plants. A second and equally severe blow to the Club's usual program was the shortening of the spring term for the Third and Fourth years, to liberate the men for essential war industries.

Our first meeting was held early in October when Mr. L. E. Westman of the Allied War Supply Board gave us a very interesting description of the chemical industries across Canada and the vast expansions taking place to meet the new demands of the munitions industry.

The Club had an interesting relief from lecture room routine when Lieut. H. K. Mason, R.C.O.C., spoke at the November meeting. Lieut. Mason had only been in Canada for a few weeks after studying in various officer training schools in England. He described life in England during the Battle of Britain, and provided many interesting accounts of dive-bombing raids and the other inconveniences of existence over there.

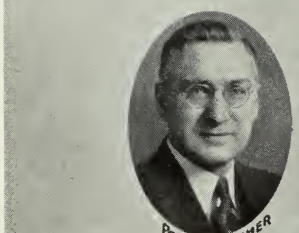
In January, our Honorary Chairman, Mr. E. J. Tyrell of the Research Bureau of the T. Eaton Co. Ltd., gave us a very instructive lecture on the chemical testing of merchandise.

Another highlight of the year's program was the initiation stag evening which was held as a finale to the Christmas term in one of Toronto's downtown hotels.

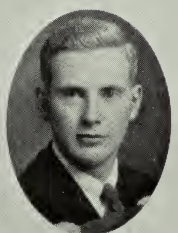
The Club finished the year with a Faculty Night when the Fourth Year men tried their hand at depicting the staff in Chemical Engineering as the students see them. Following this dramatic effort the Faculty took over to speak for five minutes each on some subject entirely unrelated to chemistry. The meeting was one of the most interesting of the year and climaxed a successful season for the Club.

The Industrial Chemical Club has as its new chairman Eric Bonham, who has done an excellent job as secretary-treasurer of the Club this year. I am sure he is capable of his new responsibility, and I wish him every success for next year.

FRASER H. ALLEN,
Chairman.



PROF. A. R. ZIMMER
HON. VICE-CHAIRMAN



R. SCOTT
CHAIRMAN

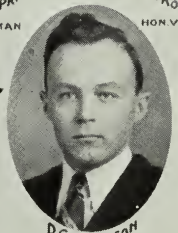
PROF. H. W. PRICE
HON. CHAIRMAN

PROF. V. G. SMITH
HON. VICE-CHAIRMAN

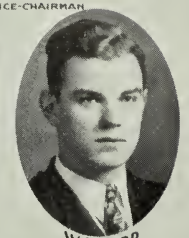
J. W. SIMPSON
4TH YEAR REP.

A. G. DAY
SEC'Y-TREAS.

ELECTRICAL CLUB EXECUTIVE



D. G. JOHNSON
VICE-CHAIRMAN



W. C. WARD
3RD YEAR REP.

Faculty of Applied Science
and Engineering

UNIVERSITY OF TORONTO

1940-1941

J. G. LUCAS
2ND YEAR REP.

R. G. HAMILTON
1ST YEAR REP.

Freeland
Toronto

ELECTRICAL CLUB

The members are to be congratulated on the way they have supported the meetings this year. Time has been at a premium for all of us, and yet in spite of this the meetings have gone forward as usual and we all have benefited as a result.

Because of the difficulty due to the war, of getting outside speakers, there has been a "home policy" this year, of having our own members talk. These talks have been comprehensive as well as interesting, such as those given on Marine Engines, Theatre Lighting, Photomicrography, Die Casting, Transformer Windings.

The events of the Club this year are as follows:

October 3rd—Prof. R. W. Angus on "Hydro Projects."
October 29th—Talks by members, and C.G.E. Films.
December 9th—Club Dance at Arcadian with Departments 3 and 5.
December 17th—Trip to Peterborough by Third and Fourth Years.
December 18th—Local trip to Mechanics of Materials, and Soil Mechanics Labs.
January 9th—Get-together Night. Cartoon, Cigar Contest, Billiards.
January 29th—Talks and beautiful sound films by C.P.R.
February 18th—Dinner at Y.M.C.A.

The Dinner which closed our activities for the year was very worth-while, and the food very good. The N. Slater Co. presented us with advertising gifts. Bob Fitzpatrick gave us some good music on his accordion. "Bud and Dill" a ventriloquist act, was splendid. Dr. Thomson, Jack Simpson, and Prof. Price gave short addresses of interest and Dr. Willinsky showed his wonderful movies of the Mediterranean, synthesized with his own sound effects.

A personal word of thanks from the Chairman to all the members of the Executive is necessary. A successful year would not have been possible without their fine work.

To Ken Buchanan and his executive to be elected next fall, we wish the best of good fortune.

Dick Scott.
Chairman.

R. E. SCOTT
VICE-CHAIRMAN

P. E. PASHLER
CHAIRMAN

PROF. K. B. JACKSON
HON. CHAIRMAN

A. B. EXTENCE
SEC'Y-TREAS.

DEBATING CLUB EXECUTIVE

Faculty of Applied Science
and Engineering
UNIVERSITY
OF
TORONTO

1940-1941

P. E. KAYE
1ST YEAR REP.

W. S. GLYNN
3RD YEAR REP.

Freeland
Toronto

DEBATES CLUB

The Debates Club offers an opportunity to Schoolmen not to be found in any other organization in this Faculty: for at no other club is the discussion carried on exclusively by undergraduates.

This year a large number of Schoolmen took advantage of this opportunity by taking part in the debates and in the Impromptu Speaking Contest.

At the first meeting the interesting topic of United States' participation in the war was discussed by Bernard Etkin and Park Reilly and in the comments which followed the whole subject was thoroughly aired.

The Impromptu Speaking Contest was a very popular feature, its popularity being enhanced by the cash prizes offered for the best speeches. The winner was Jack Ames of fourth year who spoke on "Field-Trips."

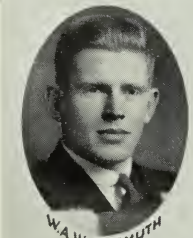
The Engineering Institute of Canada entrusted the club with the task of selecting the men who were to take part in its Annual Student Night. Some very interesting papers were delivered at the election meetings.

The Annual Segsworth Trophy Debates attracted a good deal of attention with the first debate between Third and Fourth Year teams on "Resolved That the Graduating Class in Engineering is More Useful in Industrial Than in Military Activities." Jack Simpson and Dud Barnes for Fourth Year on the affirmative were overpowered by the arguments of the Third Year team, Park Reilly and Charlie Livingstone.

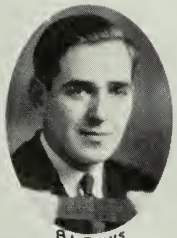
The second debate of the series between the First and Second Year solved the old, but ever timely question of "Are S.P.S. Courses Too Specialized," with the answer, "Yes, they are." The successful team, from Second Year, consisted of Gord Gilchrist and George Nixon, while the First Year speakers were Bill Cartier and J. Berman.

The club's activities were curtailed somewhat this year by the demands of military training and the shortened second term, but despite this, a very successful year was enjoyed, and we feel sure that next year's executive will have still more success.

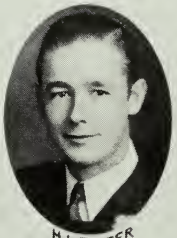
P. E. Pashler,
Chairman.



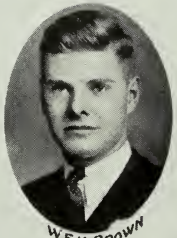
W.A. WACHSMUTH
PUBLICITY



B.L. DAVIS
PRESIDENT ENG. SOC.



H.L. FOSTER
VICE-CHAIRMAN



W.E.K. BROWN
CHAIRMAN

W.F. BRUNDRIT
FINANCE

J.M. WACHSMUTH
ENTERTAINMENT

W.D. RAMORE
MARSHALLING

SCHOOL DINNER COMMITTEE

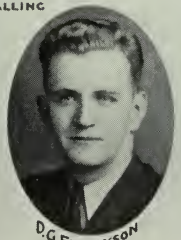
Faculty of Applied Science and Engineering

UNIVERSITY OF TORONTO

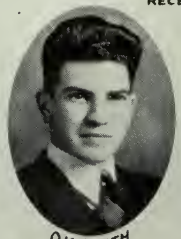
1940-1941

G.S. WILLSON
RECEPTION

F.C.T. ROUNTHWAITE
DECORATIONS



D.G. FINLAYSON
TICKET SALES



O.K. SMITH
ACCOMMODATION

R.C. FAIRFIELD
PROGRAMMES

Freeland
Toronto

51st ANNUAL SCHOOL DINNER

Thursday evening, November 21st, 1940, again saw hordes of hungry Schoolmen converging on the Great Hall, as they began the second half-century of this oldest of campus traditions. Again undergraduates, graduates, professors and honoured guests sat down to tables groaning with their load of tasty fowl, plus garnishings de luxe—all prepared to the nth degree of culinary efficiency.

When all had found their places, B. L. Davis, President of the Engineering Society, introduced the guests. Included among these were President Cody, the Hon. G. Howard Ferguson, Dean Betty, Dean Mitchell, Dr. T. H. Hogg, Dr. Bruce MacDonald, Mr. H. E. Wingfield, Mr. R. A. Bryce and many others of distinction and achievement.

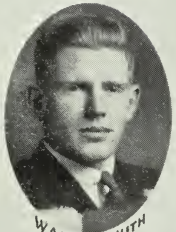
Following the toast to the University, Dr. Hogg presented the Gold Keys of the Engineering Society to the graduating officers, and Dr. MacDonald similarly rewarded those of athletic prowess. Dean Beatty, of the Faculty of Arts, distributed scholarships among those who have distinguished themselves in the realm of learning.

Next came entertainment, first in the form of a mass vocal workout led by Ross Workman; then the lively notes of a much-encored xylophonist; and finally an ace ventriloquist and his dummy—whose quips and cracks (mainly directed at the head table) literally laid us in the aisles.

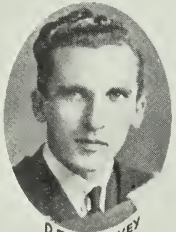
The highlight of the evening for many of us was the presentation to Dean Mitchell, our champion of the last 22 years, of an engraved cigarette case and cigar box, following an address by the Chairman which briefly sketched our debt to the Dean and our regret in losing him. Thunderous applause attested to every Schoolman's support of his words, and the Dean's reply, as he said his official farewell, was both touching and sincere.

The guest of honour and speaker of the evening, Hon. G. Howard Ferguson, gave us a most interesting insight into those qualities of the Englishman that have enabled him to come so far and will bring him safely through his present troubles. He stressed our country's good fortune in being a part of the British Commonwealth of Nations and urged us to give the fullest support to Great Britain in the attainment of peace and the readjustment that will follow.

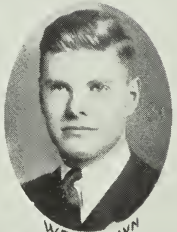
Reluctantly but heartily, we gave the closing Toike Oike, and filed out of the echoing hall—taking with us the memory of a School Dinner that next year's committee will find it difficult if not impossible to surpass.



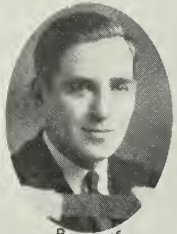
W. A. WACHSMUTH
PUBLICITY



D. F. McCONVEY
VICE-CHAIRMAN

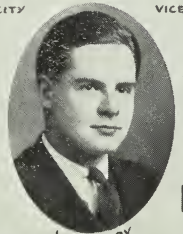


W. E. K. BROWN
CHAIRMAN



B. L. DAVIS
PRESIDENT ENG. SOC.

W. F. BRUNDRIT
FINANCE



J. R. GUNDY
TICKET SALES

SCHOOL AT-HOME COMMITTEE

Faculty of Applied Science and Engineering

UNIVERSITY OF TORONTO

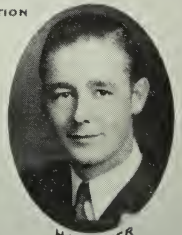
1940-1941

W. A. MOORE
RECEPTION

F. C. T. ROUNTHWAITE
PROGRAMMES

J. M. HARDING
ACCOMMODATION

J. A. MURRAY
DECORATIONS



H. L. FOSTER
DELEGATES

Freeland
Toronto

SCHOOL AT-HOME

On the night of January seventeenth, 1941, upwards of five hundred Schoolmen and their ladies fair headed Royal York-wards for that greatest of social functions—the School formal.

On entering the ball-room, attention was first drawn to the murals which covered three of the four walls. Designed and painted by our hard-working architects, they presented a complete record of the work and relaxations of each and every department in the faculty, as well as a graphic illustration of life in the C.O.T.C.

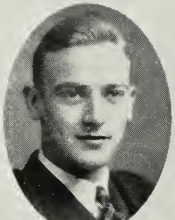
Music, as supplied by Bob Shuttleworth and his fourteen-piece orchestra, was well varied to please those who like it slow and sweet or the solid jive. In fact, the music was so good that when three o'clock rolled around and dancing was to end, popular demand induced the band to play until 3.30—when we grudgingly agreed to go home.

Starting at 11.15 we were entertained for an hour by a floor show to end all floor shows. In it there was amusement for all, no matter in what direction their tastes ran. Just to mention some of the features, there were tumbling sailors, a comic adagio team, two Southern tap artists, singers—and even "horse races" in which members of the audience could show off their equestian skill.

Following a short intermission, there was dancing again until 3.30, which came far too quickly—ending as it did an At-Home which will long be remembered by all those lads and lassies who were fortunate enough to be present.

Patronesses of the evening were: Mrs. H. J. Cody, Mrs. C. H. Mitchell, Mrs. R. W. Angus, Mrs. G. A. Guess, Mrs. J. W. Bain, Mrs. C. R. Young, Mrs. A. R. Zimmer, Mrs. W. J. T. Wright, Mrs. C. G. Williams, Mrs. G. B. Langford, Mrs. R. R. McLaughlin, Mrs. W. S. Wilson, Mrs. H. H. Madill.

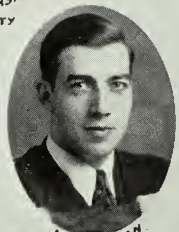
W.A.WACHSMUTH
PUBLICITY



J.M.LEITCH
VICE-CHAIRMAN

W.E.K.BROWN
CHAIRMAN

W.F.BRUNDRIT
FINANCE



A.L.MACLEAN
STAGE MANAGER

SCHOOL NITE COMMITTEE

Faculty of Applied Science and Engineering

UNIVERSITY OF TORONTO

1940-1941

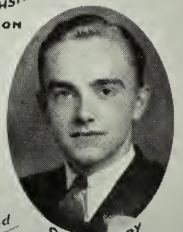
J.M.WACHSMUTH
RECEPTION

B.L.DAVIS
PRESIDENT OF ENG. SOC.

E.C.BRISCO
REVUE

J.R.GUNDY
TICKET SALES

Freeland
Toronto



F.B.McCURDY
ACCOMMODATION

SCHOOL NITE

The engineers' annual invasion into the field of entertainment made Friday, February 7th, 1941, a memorable date. This year, School Nite broke all records in every department, as scores of couples thronged the halls of Hart House in their samplings of every type of entertainment one could ask for.

Another of the famous Brisco Revues started the evening off with the proper bang. The acts included a glimpse of the Gay Nineties, a circus sideshow, a celebrated quiz program, original songs by Bill Brisco and Tom Watson, and more—much more. Questions heard were, "How did they do it in the time they had?" and, "Where did that calliope come from?"

After the show, dancing was enjoyed to the strains of the Modernaires, Jimmy Namaro, Frank Bogart—and Charlie Hannigan and his Mountaineers. This last was an innovation much enjoyed by Miners and Civils, who learned their square dancing in a much different atmosphere at Survey Camp.

Refreshments? Of course there were refreshments. The Great Hall staff did a very efficient job in creating a pause that was truly refreshing.

The genial patronage of Mrs. H. J. Cody, Mrs. C. H. Mitchell, Mrs. J. W. Bain, Mrs. C. G. Williams, Mrs. G. B. Langford, Mrs. G. A. Guess, Mrs. W. J. Smither, Mrs. G. R. Lord, Mrs. W. J. T. Wright, Mrs. W. M. Treadgold, and Mrs. H. H. Madill enhanced the occasion and made a very enjoyable evening for the committee.

There are just two things left to say: the whole evening was superb—and to the School Nite Committee, well done!

G. K. CLEMENT
ASST. EDITOR

A. L. D. MACLEAN
EDITOR

K. KIDD
ASST. EDITOR

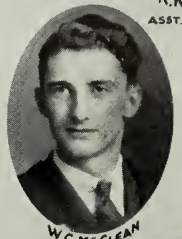
W. A. WACHSMUTH
DIRECTOR OF PUBLICATIONS AND PUBLICITY

TOIKE OIKE STAFF

Faculty of Applied Science and Engineering

UNIVERSITY OF TORONTO

1940-1941



W. G. McCLEAN
ASST. EDITOR

J. D. BARNES
SPORTS EDITOR

W. SHULMAN
FEATURE EDITOR

Freeland Toronto

TOIKE OIKE
OLLUM TE CHOLLUM TE CHAY

The Toike Oike, the most important link between the Engineering Society Executive and the men of School, has successfully carried out its functions stated as being "devoted to the undergraduates of the Faculty of Applied Science and Engineering." There were the usual eight editions this year, each announcing an important event in the life of Schoolmen.

The first issue contained rules and advice for the bewildered Frosh. Next came the Reception, the School Dinner and the Christmas Editions at more or less regular intervals.

The New Year was started off with a bang with the School At-Home edition, followed closely by the feature issue of the year, the School Nite edition. A contest was held to obtain a suitable cover for this number, which serves as a program for School Nite, and the entries were all excellent. The cover decided upon was the work of Charles Worsley, a second year Architecture student.

The term was successfully brought to a close with the Election edition in which the candidates for various offices advertised their abilities, and the Graduation edition, published with the thought that this was the end of a very full and enjoyable four years.

Our thanks go to Dean Mitchell for the time and energy spent in preparing his articles, which were always ready long before the "deadline". A great deal of credit is also due to Mr. Weir of the University Press, who handles the printing of the paper, and who gave us valuable assistance and advice.

Finally we thank the various Club Chairmen who co-operated fully by getting their club write-ups in on time, and the members of the Toike Oike Staff for their most able support.

In closing we wish every success to future Toike Oike editors—may they produce bigger and better papers.

A. L. Maclean,
Editor.

GULL LAKE, 1940

SURVEY CAMP—GULL LAKE

When the 4T2 Miners and Civils get together in the future, and tongues become loosened by a few of the traditional forty, eventually will come the question, "Remember that time at Survey Camp?"—and we will remember.

About the middle of August the boys started arriving from the four corners of the province. Some of them, owing to transportation difficulties, were somewhat late. Cars were an important item and we possessed the greatest collection of wrecks ever assembled from the marts of northern and southern Ontario. The proud owner's remarks were varied—and we can still hear Barrett; "But listen, fellows, it was an accident. I can drive alright." Wallace and McDonald mumbling "That car cost us 40 bucks and we haven't been in it yet." Berridge, Grant and Co., "It's a Jordan, didn't you ever see one before?" Palmer, "Only $60.00 and she's come 1500 miles already." Pitts—"That's the best car in camp—oil isn't very expensive." Or Coughlin, after another piece had fallen off—"¶$*&%( )'−×"

Soon after arriving we found the dance-hall called the Golden Slipper (more often the Brass Boot) where the Carnarvon Corn Crew held forth. After the first explorers had returned with the news, "There's hundreds of them up there," expeditions left every night to drift and dream at the ball-room. We found that square dances are easy, if taken in the proper spirit. We can still see Smith and Finlayson at the dance, offering a drink of "coke" to the unwary passer.

It was a short step from there to Deer Lodge, where we were welcomed with open arms by the girls—and inquisitive flashlights by the management. The pay-off came one night when the "hoodlums" of the camp arrived "a la North Country".

We were able to return our welcome by the fairer sex by inviting them to the Bunkhouse Brawl—in their cars. How we blushed with pride when we were told, "The boys this year are so quiet." If they could have seen the dance floor an hour after they had gone!—or the night we renovated the bunkhouse and Harakas did a Dunkirk on the wharf.

We found that we could enjoy our own lake, too. Canoes were in constant demand for trips nightly to see the beauties of the opposite shore, or at Rackety Rapids. Did Mrs. Minto ever

tumble to the lunches for fourteen going on a geological expedition? And where *were* those guys the night Willson and Fin were looking for them?

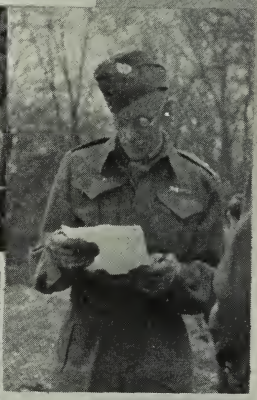
Most of the boys left camp over Labour Day, on what proved to be an expensive holiday for the over-anxious ones. Returning, we settled down to more serious work. Food was necessary for concentration—with the obvious source not far away. So, with Fripp leading the way, we foraged for grub—how were we to know that when he assured us the dark shape in the pantry was Jimmy, he meant Minto? Polley did a great job on the year sign, although there were some objections to the Robin Hood hat. The bounding cubes were in great demand, and the night the bookies wept was when Prideaux showed us some of the finer points of the game. Perhaps the greatest trip ever made was McDonald's record-breaking hitch-hike to Lindsay to do our shopping for that last week-end.

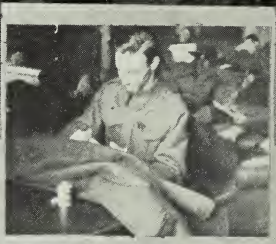
Surveying? Of course we surveyed—in our spare time—and with the work greatly eased by Schoolboy's jokes.

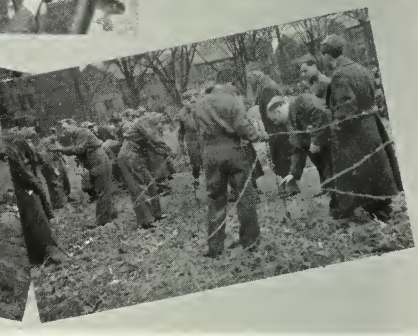
It was over too soon, and we suddenly found ourselves on the way back to the harsh realities of the city.

Yes, the surveyors of 4T2 will have plenty to talk about as they bend the elbow and toast the good old days of Survey Camp.

FAT CHAN
MULLER
THE JOB







GRADUATE'S ALBUM

$4T_1$

ENGINEERING SOCIETY

THE UNIVERSITY OF TORONTO

FOURTH YEAR CIVILS

Front Row: J. K. Johnson, E. C. Brisco, Prof. W. J. Smither, Prof. C. R. Young, J. P. Stirling, Prof. W. M. Treadgold, J. L. McQuarrie, W. D. Ramore.
Second Row: J. W. Ames, H. L. Foster, J. G. Boultbee, R. K. Pequegnat, S. G. Beckett, F. P. A. Culotta, H. F. Coupe, J. D. Near.
Third Row: J. W. Eakins, N. A. Armstrong, G. Woodall, G. T. Kirk, C. F. Phripp, T. O. Lukes, R. Milne, N. Mustard, F. J. Dobson.

Sixth Row: R. N. Parkinson, G. S. Willson, J. M. Burk, A. A. Baker, D. E. Milner, A. J. J. Barry.
Fifth Row: A. H. Renault, W. O. Pitts, J. E. Reynolds, R. G. Waite, W. A. Moore, W. E. K. Brown, E. P. J. Zuerrer, J. M. Wachsmuth, E. H. Despard.
Fourth Row: A. G. J. Knott, J. B. Watts, T. A. A. Sharpe, L. C. West, F. A. Rose, E. L. Healy, G. W. Rooney, H. S. Scott, D. B. Underhill, L. W. Young.
Third Row: J. J. McGrath, A. L. Lambe, W. J. H. Disher, G. B. Stark, C. F. Starr, F. J. E. Lockhart, W. V. Vincent, E. L. Hartman, P. B. McCurdy.
Second Row: Mr. J. K. MacFarlane, D. B. Campbell, Prof. G. A. Guess, L. Pancer, A. L. MacLean, N. L. Bennett, J. K. Magor.
Front Row: Mr. W. J. Nichols, Mr. W. T. Turrall, Prof. C. G. Williams, Prof. E. S. Moore, Mr. A. Frumkin, Prof. J. A. Newcombe, Prof. J. T. King, Mr. S. E. Wolfe, Mr. W. A. M. Hewer.

FOURTH YEAR MECHANICALS

Front Row: J. S. Munro, J. R. Doyle, Prof. W. G. McIntosh, Prof. E. A. Allcut, Prof. R. W. Angus, Prof. R. Taylor, Prof. G. R. Lord, Prof. R. C. Wiren, D. L. Angus.
Second Row: A. R. Capel, L. T. Redman, F. M. Bond, J. Hirschorn, W. H. Brydon, R. W. Hannaford, W. D. Fear, W. H. Merrill, J. E. Harley, W. R. Hoffman, J. W. Ross.
Third Row: D. G. Harkness, L. T. Hore, G. H. D. Martin, T. J. Coates, B. F. Booth, A. R. Jupp, J. R. Fitzpatrick, J. G. Wilkin, F. S. Idenden.
Fourth Row: M. V. Swick, D. S. Allen, H. T. Jones, J. A. Carter, W. P. Harris, R. A. Evans, W. Bruce, H. J. MacLean, B. R. Murphy, E. A. Weir.
Insert: B. G. Spencer.

FOURTH AND FIFTH YEAR ARCHITECTS

C. F. T. Rounthwaite, W. Shulman, Prof. E. R. Arthur, W. T. Siu, W. E. Carswell, S. B. Barclay.

ENGINEERING PHYSICISTS

Back Row: Prof. E. F. Burton, Prof. Satterly, Prof. C. R. Young, Prof. Gilchrist, Prof. K. B. Jackson, Prof. Smith, Prof. Leggett.
Front Row: P. E. Pashler, W. G. McClean, C. S. Dinsmore, V. V. Mason, B. Etkin, J. R. Whyte, J. C. Fox, G. L. Goodwin, G. R. Cates.

FOURTH YEAR CHEMICALS

Insets: Prof. McLaughlin, Dr. Breckinridge, J. Heberling, D. McConvey, M. Reid.
Fifth Row: B. Neilson, C. Skay, O. Cummings, D. Staples, L. Shemilt.
Fourth Row: Mr. Thompson, Mr. Adelman, W. Carleton, J. Whitehead, L. Macrae, W. Stadelman, R. Linton, G. Willan, R. McMillen, J. Jaffe, J. Keller.
Third Row: Mr. McElhenney, S. Stanyon, W. Steeves, F. Upton, F. Munro, S. Patterson, E. Ratcliffe, R. Eyres, R. Fugler, H. Kingsmill.
Second Row: Mr. Fitzgerald, F. Walker, E. Wilson, F. McPhee, A. Vila, E. Evans, F. Allen, R. Morrow, W. Wachsmuth.
Front Row Mr. Hunt, Mr. Marks, Prof. Bain, Prof. Ardagh, Prof. Smith, Prof. Boswell, J. Jones, F. Harry, G. Lankin.

FOURTH YEAR ELECTRICALS

Front Row: Mr. R. J. Brown, Prof. V. G. Smith, Prof. H. W. Price, Prof. D. N. Cass-Beggs, Mr. J. E. Reid, Mr. F. Noakes, Mr. R. G. Anthes, Prof. A. R. Zimmer, R. Scott.

Second Row: B. K. Smith, G. W. Procunier, H. W. Mole, N. Green, J. D. H. Barnes, R. C. Henderson, J. W. Simpson, C. F. Schmelzle, G. F. Kelk, H. L. Wilson.

Third Row: V. A. DePaul, V. G. Pilon, I. M. Liss, W. A. V. Dafoe, M. J. Waller, J. K. McLinden, A. B. DesRoches, E. J. Bartley, D. L. Cole, W. J. Stoddart.

Fourth Row: H. P. Smith, R. B. Jackson, C. H. Townson, G. E. Burridge, J. W. Lee, K. S. Prittie, A. C. Hudson, W. Mark, W. Diak, F. R. Hunt.

Absent: N. T. Barratt.

CLASS OF 4T4

Freshmen throughout the University of Toronto are nearing the close of their first year on this campus; for them it has been a memorable adventure. Each has had his individual experiences, and each will retain his own impressions of the year.

Several events in the life of the S.P.S. freshman have been outstanding. We all remember that first day in Room 38, the profusion of green ties, the Dean's address, our introduction to the Engineering Society, and the first of the ever-increasing demands on our pocket-book. ("You don't have to buy this drawing equipment right away, but we're going to begin work to-morrow, and we don't want anybody to get behind.")

Then came the Freshman Edition of Toike Oike, and with it the Sophomores, who for some reason seemed strangely unfriendly. Followed the famous liquid air lecture, and the first year elections. The Sophomores officially welcomed us at our "initiation" in Hart House, and we reciprocated at the Soph-Frosh dance in the Royal York Hotel.

It seemed that Dean Mitchell had scarcely finished greeting us as freshmen, when he bade us good-bye at the School Dinner. Although we haven't gotten to know him, we feel that we have at least made his acquaintance.

The Modernaires were so danceable at the Soph-Frosh, that they were engaged for our Christmas Party, which was held jointly with our new friends, the Sophomores. Only a day or two more of lectures, and we had reached the Christmas holidays, which preceded the School At-Home, and School Nite. These two brilliant successes drew the envious attention of the entire University to S.P.S.

Varsity headlines have given evidence of School's mighty athletic prowess, and 4T4 has contributed greatly to these many achievements.

There is a rumour that there are many jobs to be had this summer, even for first year men. Let us hope that neither our jobs nor other reason will prevent many of us from returning next year as Sophomores.

Hugh Hall,
President, 4T4.

CLASS OF 4T3

As the lad who switched on the current for the electric chair said, "This will kill you."

We were fortunate in having as subjects for our genial ministrations one of the largest freshman classes in the history of School. They are a swell bunch of fellows, and the inevitable horseplay during the Initiation period and at the Frosh Reception, was very good-natured and thoroughly enjoyed by both sides. This Camaraderie was further cemented by joint Freshman-Sophomore dances; the Soph-Frosh and the Christmas Ball, both at the Royal York, with music by the Modernaires. The School Dinner was highlighted by a valedictory address from Schoolman Dean Mitchell, who graduates from School this spring after twenty-two years of endeavour. Good luck to you, Dean Mitchell.

A scintillating floor-show and original murals highlighted the most successful School At-Home in years. School Nite of course, always sparkles with gems of Engineers' wit. The Second and Third Year Dance on February 12th, followed by the Junior-Soph-Frosh on March 11th, rounded out the relaxation department for the year.

Military studies have become of paramount importance in our lives. We are all giving the best that is in us to prepare ourselves for our part in Canada's war effort. Many of our friends and classmates have already joined the colours. Some of these are: Hugh Godefroy, Jack Clarke, Stan Ward, Larry Doherty, Joe Breen, Bill Brown, Bob Rogers.

The rest of us anticipate a pleasant couple of weeks at military camp after the exams in April.

Looking forward to next year, we have a good executive—Bill Moeser, Frank Lewarne and Jerry Heffernan. Let's give them all the support we can, and keep the 4T3 finances building up for the Grad Ball.

Bob Scott,
President.

CLASS OF 4T2

Third Year! Well, what do you know? We made it! After running around in a fog for two years, we arrived back at the old Schoolhouse to find that we are Juniors and in a position to look on in amusement at the initiation ceremonies of the Second and First Year.

The new term wasn't very old until the effect of the war was really brought home. With approximately eighty taking ten hours a week of C.O.T.C. lectures and eighty more absorbing seven hours a week of the Auxiliary Battalion Drill, the members of 4T2 were doing their part in preparing themselves for service to Canada in the present struggle.

The sale of Year Cards while up from last year, didn't quite come up to expectations. However, by organizing with Second and Fourth Years for dances, the funds are being increased towards a successful Graduation Dance.

The first event of the season was the Soph-Frosh which we attended on our Year Cards by arrangement with First Year. The Modernaires supplied the music in the traditional setting on Front Street. Definitely a good party! Thank you, First Year.

Following one of the best School Dinners on record, we joined with Fourth Year in a Christmas Dance at the Arcadian, and Eddie Stroud on December 17th.

School At-Home and School Nite have been attended in unprecedented numbers, and at writing, plans are under way for another joint Year Party—this time with Second Year, at the Arcadian again on February 12th, and the Junior-Soph-Frosh finale at the Royal York on March 11th.

The athletic activities of 4T2 have been prominent as always, in bringing S.P.S. Interfaculty Championships in Rugby, Lacrosse, Track, Harrier, Boxing, Wrestling and Fencing, and Tennis.

The executive wishes to thank one and all members of 4T2 for their co-operation and we know that the incoming executive can look forward to a first class graduation year.

D. G. Finlayson,
President.

J.R.STIRLING
CIVIL CLUB REP.
W.V.VINCENT
SECY-TREAS.
H.A.G.KINGSMILL
VICE-PRESIDENT
J.S.MUNRO
PRESIDENT
J.E.REYNOLDS
ATHLETIC REP.
J.M.WACHSMUTH
M.Y.M.CLUB
S.B.BARCLAY
ARCHITECTURAL CLUB
FOURTH YEAR
EXECUTIVE
Faculty of Applied Science
and Engineering
UNIVERSITY
OF
TORONTO
1940-1941
D.L.ANGUS
MECHANICAL CLUB
F.H.ALLEN
IND. CHEM. CLUB
R.SCOTT
ELECTRICAL CLUB
V.V.MASON
ENG. PHYSICS CLUB
P.E.PASHLER
DEBATES CLUB
Freeland
Toronto

CLASS OF 4T1

As we sit here and review the events of the past four years we wonder if you 4T1 men recall some of the highlights as we do. I am sure you all remember our freshman year, and especially those first few weeks with that little bit of dynamite, Murray Scott, the Soph President, herding us around like sheep or introducing us to the tap in the basement. Then under the leadership of George Kelk we took matters into our hands and gave the Sophs a taste of their own medicine. Shortly after the flag rush came our first school dance, the Soph-Frosh. With the memories of this fresh in our minds we vowed never to miss another school function during our stay in S.P.S.

In our second year with Herb Coons at the helm we gave the Frosh a reception long to be remembered. This type of initiation now seems to be a thing of the past, we are sorry to say.

Then came our Third Year and we realized that in those first two years that we must have been doing some studying besides enjoying School life for here we were half way through our stay at School. Bruce Davis took charge of our affairs for our third year and did a fine job, giving us four dances instead of the usual three and still leaving the year in good financial standing.

Entering our fourth year we found it hard to believe that we were now Seniors—the Graduating Class. It was now our turn to have a Graduation Ball, that inevitable explosion of the social whirl which we had been looking forward to for all these years. This year the Grad Ball was a reunion for those who have been called out of School due to the war, besides being the finale for those of us who are left.

And so as we leave the portals of the little red Schoolhouse, we take off our hats in respect to School just as we did when we entered four years ago. We have enjoyed our stay, we now have a profession to be proud of, one of great value to our country and ourselves, and so may we go out into the world and do our part to make it a better place in which to live.

J. S. Munro.

J.P. STIRLING
COUNCILLOR

J.D. BARNES
SEC'Y-TREAS.

B.L. DAVIS
VICE-PRESIDENT

A.L. MACLEAN
PRESIDENT

J.S. MUNRO
VICE-PRESIDENT

A.A. BAKER
COUNCILLOR

A.R. CAPEL
COUNCILLOR

P.E. PASHLER
COUNCILLOR

PERMANENT EXECUTIVE
OF
THE CLASS OF 41

Faculty of Applied Science
and Engineering

UNIVERSITY OF TORONTO

1940-1941

S.B. BARCLAY
COUNCILLOR

F.H. ALLEN
COUNCILLOR

J.W. SIMPSON
COUNCILLOR

C.L. BAKER
COUNCILLOR

J.M. WACHSMUTH
COUNCILLOR

Freeland
Toronto

4T1 PERMANENT EXECUTIVE

With the close of this shortened spring term, the members of the Class of 4T1 find that what have been the most eventful four years of our lives are ended. This thought comes as a shock to most of us who cannot quite grasp the idea that our Schooldays are over. Many friendships have started and flourished during this period by reason of working together, living together, playing on the same teams and enjoying the same social activities.

The years that we have spent at School have been filled with incidents never to be forgotten, and it is the intent of the Executive to keep in touch with all members and to afford a means whereby you may keep in touch with each other. To accomplish this the co-operation of every man of 4T1 is needed. In this regard we should like to say that "contact cards" will be issued to all members of the class, and would you please fill out your card and send it to the secretary, Dud Barnes, as soon as possible. The idea behind this is for the secretary to have on file a complete list of members of 4T1, their address, their position, and the state of their health, etc. With this information it will be a simple job for one member of the class to contact any other through the secretary.

The Executive will contact you frequently through the University of Toronto Monthly, our own publications, and by personal correspondence. Be sure to write us about any matter, and we will supply you with all the information that we have available.

Once again we urge you to keep in touch with the Executive in the years to come, and thus help in cementing and strengthening the friendships and spirit fostered during our undergraduate days.

May good fortune and happiness be yours throughout the coming years.

President:

A. L. Don Maclean,
594 Lakeshore Ave.,
Hanlan's Point,
Toronto. Tr. 1069

Secretary:

J. D. H. Barnes,
190 Carlton St.,
Toronto.
Ra. 2277

THE GRAD BALL

There is one event in every Schoolman's life that stands out above all others. For three long years he hears of it from others, but in the fourth year his information comes in a more satisfactory manner—first-hand. If you haven't guessed, the subject of discussion is the Graduation Ball—that be-all and end-all of School social functions.

This year the Ball was held on March 7th, in the Concert Hall of the Royal York Hotel. Here gathered white-tied lads of 4T1 with their ladies, to celebrate the successful ending of four years' hard work (and play), and to have one last get-together before stepping forth into that place we have heard so much about—the world.

Music by Bob Shuttleworth and his orchestra succeeded in making us forget the time completely, so that midnight and dinner came before we realized the dance had more than begun. At this point we were entertained by a very amusing and clever bicycle act.

After dinner came more dancing, with large doses of the Latin variety of rhythm, ably demonstrated by a specialty dance team.

When 3 o'clock rolled round, we begged another half-hour of music. But this too was soon gone, and we were forced to admit that the evening was over.

Congratulations are due to the Committee for providing us with a party that lacked nothing and will remain in our memories as "one of the best."

SCHOOL ATHLETICS

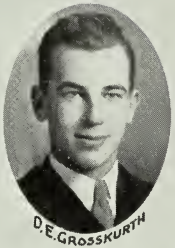
1941

ENGINEERING SOCIETY

THE UNIVERSITY OF TORONTO

H. J. BARRETT
SEC'Y-TREAS.

R. W. FUCLER
PRESIDENT

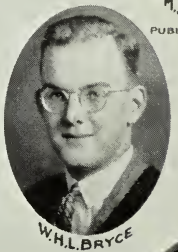


D. E. GROSSKURTH
VICE-PRESIDENT

M. J. AYKROYD
PUBLICITY MANAGER

J. E. REYNOLDS
4TH YEAR REP.

ATHLETIC ASSOCIATION EXECUTIVE



W. H. L. BRYCE
3RD YEAR REP.

Faculty of Applied Science
and Engineering
UNIVERSITY OF TORONTO

1940-1941

J. N. DICKIE
2ND YEAR REP.

W. G. HENRY
1ST YEAR REP.

Freeland
Toronto

S.P.S. ATHLETIC ASSOCIATION

Congratulations, men of S.P.S. With the C.O.T.C. and the Training Centre Battalion taking up the majority of your extra hours, you have still found time to make 1940-41 the best year in the history of "School" Athletics.

In the fall, the athletic machinery of this faculty got off to a flying start in the Intramural Sports schedule. Scarcely giving us time to get the summer dust off our slide-rules, the golf team hitch-hiked out to the Glen Eagles Country Club and chalked up School's first championship. History was made this year when the Junior and Senior Rugby Team swept through all opposition to finally share the Mulock Cup. Interfaculty Championships have also been won this year in Lacrosse, Swimming, Harrier, Track, and Novice Boxing, Wrestling and Fencing.

This faculty has potential champions in hockey and basketball with the baseball and waterpolo teams leading the parade in their respective groups. From all reports, we can look for the squash team to repeat their championship drive of last year.

Thus, with more championship teams than you could shake a stick at, and quantity, combined with quality, it is little wonder that S.P.S., at this writing, is leading its closest competitor in the F. A. Reed Trophy competition by over 300 points.

We say "Good Luck" to the large number of men from School who have joined the Active Service or are engaged in war work in some capacity—among these our president, Ron Fugler, and the fourth year representative, Ed Reynolds. Their departure has caused our committee to look as cut up as a censored letter.

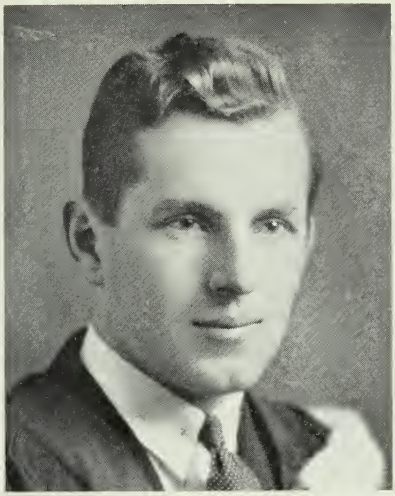
The Athletic Association would like to congratulate "Mac" MacCutcheon on making the F. A. Reed Competition one of the greatest intramural competitions in the world to-day, which needs friendly competition more than ever before.

Don Grosskurth,
Vice-President.

"S" AND "T" HOLDERS

Fourth Row: J. Quist, I. Sloane, W. Quittenton, W. Robinson, J. Turner, J. Jaffe.
Third Row: W. Hodgson, J. Mees, T. Campbell, J. Brennan, R. Forestell, P. Kelly.
Second Row: L. Woods, F. Radmore, D. Allan, F. Kellam, G. Biggs, P. Schell, W. Steeves, T. Kingsmill.
Front Row: D. Marshall, H. Moorehead, J. Hawkins, F. DeMarco, D. Roland, J. Flett, C. Baker.

BRONZE "S"



This year the graduating class has awarded its highest athletic honour to Stew Munro. For four years his team play and sportsmanship have featured many of School's games.

Coming here in 1937, he immediately began his career with the Junior Rugby Team. Not satisfied to be idle during the spring term, he joined the hockey and baseball ranks. When rugby practices began in the fall, Stew was out there "bright and early." Hockey and baseball again claimed his spare moments during the spring session. With the start of Third year Stew joined the Varsity Intermediate Rugby squad, and also played hockey and baseball for his faculty. During his final year he played on the championship Senior Rugby team (joint champions with Junior School). Baseball and hockey took up much of his time and energy during the final hectic three months of his year.

To top this grand athletic record, Stew was awarded the Phene Memorial Trophy by his team-mates of the Senior School Rugby team in recognition of his splendid work on the gridiron.

Besides these achievements, his executive ability has led him into the positions of Vice-President and President of his class respectively during the last two years, and he was elected to the Vice-President's position on the 4T1 Permanent Executive.

This all adds up to a very enviable record, and the Class of 4T1 wishes you every success. Good luck, Stew!

PHENE MEMORIAL TROPHY

The winner of the Phene Memorial Trophy this year is "Stu" Munro. This cup is presented each year to the man on the Senior S.P.S. Rugby Team who, in the opinion of his team-mates, has shown the most sportsmanship.

Stu Munro was, without a doubt, a wise selection. He plays the game for the love of the sport. Whether the game was won or lost, he could be counted upon to put forth his best.

School is proud of this player who can take a defeat with a smile and come back next time to play a clean sportsmanlike game.

And Stu, may this Trophy remind you of your team-mates' esteem, and the faith they have in you.

Best of luck, Stu!

GEORGE T. MORLEY

May we pause for a moment to pay tribute to one who has passed on. During an interfaculty hockey game on January 22nd, 1941, George T. Morley of third year, succumbed to a heart attack.

George came to Varsity from Lakefield Preparatory School and Owen Sound Collegiate with the Class of 4T2. An honour man in Engineering Physics, specializing in Aircraft Design, he had taken an active part in School athletics every year. His whole-hearted contribution and sportsmanship will ever be remembered by his team mates.

First, last, and always, he is a "School-man."

SENIOR SCHOOL RUGBY

The Senior School Rugby team has the distinction of being School's first untied, undefeated team in as long as any Schoolman can remember. The team played like champions throughout the year and had it not been for an early winter blizzard, they would probably have been declared champions instead of co-holders of the Mulock Cup with Junior School. To pick stars would be unfair because the team functioned like the proverbial well lubricated machine.

Coach Annis Stukus had only to see his material at the first work-out in order to call this team to win the Trophy. On looking around the campus the coach saw 5 veterans from the Junior School team of 1937—Stu Munro, Ab Barry, Vic DePaul, Ed Reynolds and Ron Fugler. These men, playing their fourth season together, were joined by such seasoned players as Jack Plaxton from the Big Blue team, and Jim Hurst from the Varsity Intermediates, and Clare Baker from numerous School teams.

Stuke thought he had a pay-off back in Jim Hawkins, but a broken collar-bone, suffered in the second game, ended Jim's career. This tempted Van Smith into making a notabl? comeback.

The best outside player in the league, Chuck Reuben, was aided in the downfield chores by John Mees and Frank DeMarco.

Pete Rogers, John Flett, Jim Coughlin, Ed Percival and "Big Red" Hodgson steadily dug themselves in along the line all season and took turns inspiring the back-field. Late in the season Don Finlayson was lost to the team because of a torn cartilage in his knee. This painful mishap decidedly weakened the team but Don's shoes were filled by Doug Marshall, the man who ran as though Mr. Higginbottom were after him.

It will be many years before the Interfaculty League sees such a play as the extension play used by Senior School in 1940: Ron Fugler starting the play at the perfect opportunity, Stu Munro's weaving around the end like Tony Golab, behind a well-timed block by Jim Hurst, graceful ball-handling and cutting in by Jack Plaxton, who in turn was able to shake loose Ab Barry or Van Smith to scamper down the side-line. And the crowd making so much noise you could hardly hear Herby Barrett.

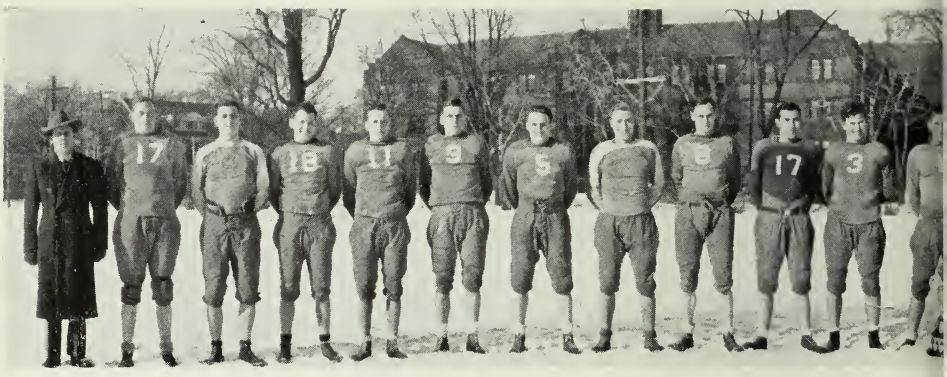
Congratulations, fellows, you have done a perfect job, and you deserve "Ye Olde Mug."

J. Bell,
Manager.

SENIO

A. Stukus (*Coach*), D. Finlayson, W. Hodgson, J. Hurst, J. Flett, S. Munro, D. Marshal
F. DeMarco, J. Smit

JUNIO



F. Stukus (*Coach*), K. Gow, W. Campbell, R. Prentice, D. Clarke, W. Hambly, S. Penoyer, E. Baill
H. Spence, R. McIntyre, D. Hamlin, B. Kelly, J. Simpso

UGBY

Reynolds, R. Paul, F. Percival, C. Reuben, H. Barrett, J. Mees, R. Fugler, C. Baker,
. Barry, J. Bell (*Manager*).

UGBY

O'Connell, J. Brennan, W. Henry, D. Grosskurth, J. Rettie, G. Biggs, R. Hamilton, B. White,
Sloane (*Manager*). *Absent:* R. Quittenton, D. Roland.

JUNIOR RUGBY

A new grouping of the interfaculty rugby teams put Junior School in a bracket with Victoria, U.C., and Trinity. Although military training was an unknown quantity at the start of the season, the coach, Frank Stukus, had a bumper crop of material to choose from. So large was the turnout that difficulty was found in equipping the men. The fact that Intercollegiate competition had been eliminated for the present was, without doubt, responsible for the large turnout and also the calibre of the material.

Early in the season, the Juniors showed their superiority by defeating Vic with a score of 6-1 when Henry carried the ball over for the count. Grosskurth, the only scorer in the first game with U.C., gave us all the points in a 8-0 victory. Trinity was the next victim when a drive down the field resulted in McIntyre going over for a touch. Grosskurth and Hamlin were absent from this game, but the boys came through with a 5-0 win.

In the return game with U.C., a kick in the last quarter gave U.C. a victory over the Juniors with a final score of 6-5, with Henry getting School's tally. The last few games in the schedule found School getting a win over Vic, 1-0, and a 1-all tie with Trinity. "Long John" Simpson did the educated-toe-act in both these games to give School their points.

In the semi-finals School took Dents, the winners of the other Junior Group, to the tune of 28-0. Brennan caught two sweet forwards to go over for 10 of the points, while Grosskurth and Biggs also scored majors. The Juniors showed perfect teamwork and smart thinking in this game, and earned every point in the score.

Picking out stars on this year's team is a difficult job. We were fortunate in having a powerful line with Clark, Hambley, Rowland, and Gow as standouts, and "Weed" Quittenton, one of the best outsides in interfaculty rugby. In the backfield, Henry, Hamlin, and Biggs were the money men, while Simpson and Grosskurth shared the kicking duties. White, Hamilton, Rettie and Penoyer will bear watching on future S.P.S. teams.

With an unholy glint in their eyes, and fratricide in their hearts, the "babies" looked forward to a final victory against Senior School, but unseasonable weather defeated their desires. A joint championship was declared, and thus the season ended.

I. Sloane,
Manager.

SENIOR BASKETBALL

The Senior School basketball team is right in the middle of a fight for the league leadership. They are grouped with Senior Vic, Senior U.C. and Senior Meds, with whom they have played one each to date. Two of the games were played on the big floor; and, given room, School really went to town, beating Senior Vic 28-15 and Senior U.C. 34-13 before a Saturday night crowd. The game with Senior Meds was reported in the Varsity as "Meds Rout School, Score 28-27." This game was a heart-breaker from the School point of view. Levy of Meds scored the winning basket with ten seconds to go.

In spite of this set-back, the boys feel confident that in the next meeting, the score will read the proper way.

Prominent among this year's personnel are Allan and MacLean of last year's Senior team, Barrett, Bell and Bryce up from the Juniors and Finlayson of the Intercollegiate Team.

At present, the immediate concern is in winning the group, but bursting with confidence, the general outlook is to the playoffs.

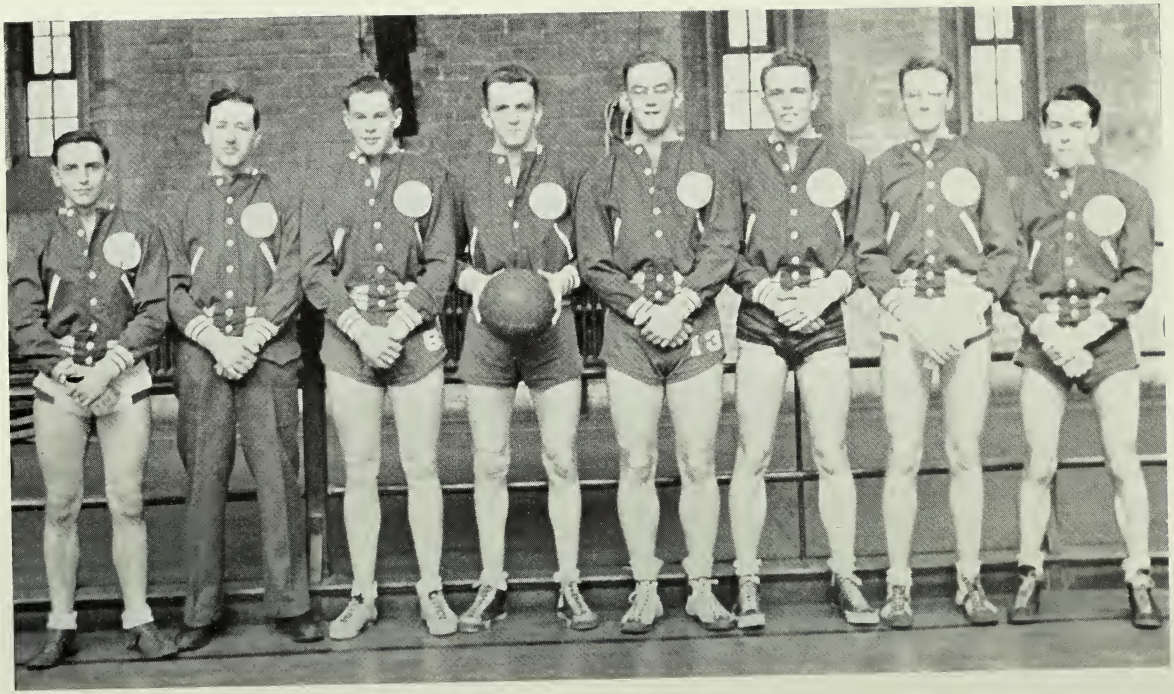
D. G. Finlayson,
Manager.

JUNIOR BASKETBALL

This year the team is made of all star material and the chances of bringing the cup back to the School house for the second consecutive year look good, despite the expected strength of O.C.E. From last year's champs, we have the line of Wilson, Workman, and Kellam, intact. This line have already proved their worth and have made a reputation for being smooth ballhandlers and accurate shots. From last year's team we have Johnny Lucas who centres two freshmen who really know the game—Ciglen and Anderson. There are two more forwards who, though small in stature, make up for it in fight—namely, McNiven from Etobicoke and Shorter from Ottawa. As is plainly seen this set-up makes a fast offensive team. There are only two guards Parchello and Brooks, but these men are good enough to handle that end of the game for the 30 minutes of play.

At the time of writing we have defeated U.C., Vic, and Meds in that order, and lost one game by one point to Vic. It seems quite reasonable to say we will take the group and go on from there if the boys don't get too overconfident.

SENIOR BASKETBALL



H. Coupe, A. Halford, J. Bell, D. Finlayson, W. Bryce, F. Allen, H. MacLean, P. Schell.
Absent: H. Barrett, E. Reynolds.

JUNIOR BASKETBALL

Second Row: B. Wallace, R. Brooks, W. Parchello, J. Lucas, M. Ciglen.
Front Row: W. Anderson, J. Wilson, F. Kellam, G. Shorter, G. Workman.

THIRD BASKETBALL

Front Row: T. Campbell, F. Lewarne, I. McCallum, H. Berrin, C. Theuerle.
Second Row: P. Onasick, W. Johnson, J. Bell, F. DeMarco.

III BASKETBALL

The Third team got off to a rather poor start this season. We were taken into camp by our rivals across the road by 26-13. Our second game, however, with U.C. Thirds was somewhat better. The boys played heads-up ball, and ended up on the better half of a 39-16 score. Fate turned against us for our third game. Everything went wrong and the final whistle found Vic up 10 points, and us with surprised looks on our faces.

Bill Campbell—Bill is a handy man to have under a basket. He's so tall he doesn't even have to reach for a dog-shot.

Tommy Campbell—Forward. A good ball handler and being a U.T.S. man, should know his basketball.

Johnny Johnson—Johnny never seems to get the breaks. He tries twice as hard and has half the luck on actual scoring chances as any other member of the team.

Carl Theuerle—Carl is fast, and, although not a high scorer, sets up many plays which turn into baskets.

Ian McCallum—The ace up our sleeve. Ian has collected almost half of the team's points to date. Latest reports are that he's going to keep right on.

Peter Onasick—Pete is a first year man who needs a bit of practice to round off a few rough corners. He handles a basketball like a baseball.

Frank Lewarne—A newcomer in basketball circles. He turns up in the centre of a scramble with the ball and turns it into a basket.

Harry Berrin—Harry is tricky and fast; a good ball-handler and deadly on set-shots.

Frank DeMarco—Frank is a guard of repute, and has, into the bargain, a way of sinking the tough ones.

There they are. We promise we won't win the cup this year, but we'll have fun not doing it.

Jack Bell,
Manager.

IV BASKETBALL

J. Hurst (*coach*), K. Guy, A. Chepkin, W. Brant, J. Turner, B. Martin, P. Mason, K. VanWyck, T. Patterson.

S.P.S. IV BASKETBALL

The high schools are turning out more and better basketball players these days, as shown by the promising group of freshmen players on the Fourth Team. The team is comprised of such starry players as:

Jim Turner—"Bullet" for short—a North Toronto product and a high scoring guard.

Warren Brant—"Jeff"—a tall fellow from Oakwood Collegiate—a good long shot guard—a specialist at intercepting passes and turning them into baskets.

Ken Guy—"Bus"—a scrappy forward from Riverdale, who always gets his share of points with his left hand shot.

Tom Patterson—also hails from Riverdale and is a forward. Is already cultivating a nice pivot shot.

Bill Martin—a member of last year's Champions and is still going strong at the guard position. A good steady player from North Toronto.

Ken Van Wyck—a big husky fellow from U.T.S. who is settling down to be a pivoting forward.

Pete Mason—a close checking guard from Oakwood Collegiate. He always gets his man.

Art Chepkin—an old timer at the game. A good player but could be better if he put into the game.

And so you have them—a team which has not been defeated as yet, and has scored as many as 72 points in a single game.

Jim Hurst,
Manager and Coach.

TRACK AND HARRIER TEAM

Front Row: F. Lewarne, G. Lorimer, D. Finlayson, J. Watts, B. McDonough.
Back Row: D. Marshall, L. Peckover, R. Hamilton, J. Hurst.
Absent: G. Goodwin, R. Foulis.

TRACK AND HARRIER

With the cessation of Intercollegiate competition, the interest of the University in Track and Harrier revolved more than ever around the interfaculty meets. In these, School experienced its best year since the hey-dey of Crichton and McHenry. Out of a possible four, Schoolmen captured three meets. The Brown twins, of British Empire and Olympic Games game, scored 37 points to give O.C.E. its first Senior Track win in history. S.P.S. finished in a rush by winning the first four places in the 3-mile race to nose out Vic on the day's results.

In the Junior Track meet, in which entries were limited to freshmen and others who had not won an Interfaculty event previously, School won by a comfortable margin. This tenders well for the future, and assures S.P.S. of capable representatives in the next few years. To bear this out, our freshmen eked out a victory in the Junior Harrier, despite an entry of 75 from U.C.

To climax the year's outdoor activities, the distance runners, the harrier and cross-country men swept the Senior competition by placing 1st, 2nd, 3rd, 6th, and 8th, and setting up a margin of 25 points over the nearest faculty.

Among School's representatives there are a few to whom the credit for these victories is mainly due. The outstanding of those who competed was Lionel Peckover. A freshman, "Peck" scored wins in the ¼, ½, and mile races in the Junior Track—1st in the mile, 2nd in the half mile, and fourth in the three mile. Not content with this, he ran a marvellous race to finish third in the Senior Harrier—his first try at this distance and course. Geoff Goodwin polished off four years of Interfaculty and Intercollegiate competition by winning the Senior 3 mile and the Senior Harrier. Gord Lorimer, formerly of U.T.S., stood out by winning the Junior Harrier, placing second in the Senior Harrier, third in the Senior 3 mile, and third in the Junior High Jump. Supporting these stars were Hamilton in the high jump, Lewarne in the pole vault and broad jump, Onasick in the discus and Watts in the javelin.

All in all, this has been the most successful season S.P.S. has experienced in years. With the freshmen in the fore, the Rowell Cup for Senior Track should return, after three years' absence, to the Little Red Schoolhouse.

D. G. Finlayson,
Manager.

SOCCER

Back Row: P. Harakas, J. Wilson, R. Stuart, J. Cronyn, G. Franks, R. Seymour, D. Hibbard.
Front Row: D. MacKenzie, P. Dandeneau, R. Martin, H. Seymour, B. McPheeters, A. Riquers.

SOCCER

At the start of the season this year, it looked as though School had an invincible team. However, our inability to practise due to the combination of school-work and military training soon became evident, when we were held to a draw by Vic in the opening game.

Our two games with U.C. did much to bolster our confidence and the scores of 5-0 and 7-0 clearly indicate that we had the advantage. The second game with Vic was a repetition of the first and ended in a Vic-School tie. The last game, a sudden-death final with Vic was a real thriller. Vic scored a goal during a scramble in front of our net in the closing moments of the first period. From then on, School carried the play to the Artsmen, fighting their way in and shooting from all angles. Twice, our shots hit the goal-posts, only to bounce out again. Then the final whistle blew and our season was over for another year.

The School team this year was credited with having the best potentialities of any in the university. On defense were Al Frosst and Bob Seymour, who were undoubtedly outstanding both offensively and defensively. Their sure kicks and accurate passing plays launched many a successful rush by the forwards. Hal Seymour, captain and centre half, is considered one of the city's best, and was always the outstanding man on the field. John Wilson, playing left half in his first year on the team, made some excellent plays during the season, which bode well for future soccer teams. The forward line, paced by Capper, Hubbard and Franks showed speed and combination; their only trouble seemed to be in making good their many scoring chances.

Despite present conditions, it was splendid to notice the spirit which was shown by the men throughout the series. Greatly to their detriment in school work, the men were always out to the games, and their spirit of sportsmanship on the field was noteworthy. Although our chances for the cup have been put off for another year we look back on a very successful season.

To all who turned out this year, I would like to express my gratitude for their co-operation, and the wish that next year they will break the Vic jinx.

Russel S. Smart,
Manager.

SENIOR LACROSSE TEAM

W. Bryce, J. Quist (*manager*), F. Newman, A. Lambe, G. Reeves, K. Gilbert, F. Radmore, F. Starr, H. Moorehead.

SENIOR LACROSSE TEAM

Yes sir, it has been done again. After 3 years, the "Dafoe Mug" returns to the Little Red School-house, for another season.

After a few practices, the season opened at the end of October, and we suffered our one and only defeat at the hands of O.C.E. The less said about this contest the better for us. The following game with Dents was more to our liking when the score became 9-2 in our favour, thanks to the stellar playing of Bryce and Starr. O.C.E. gave us plenty of trouble in the following game and the score of 7-6 when the final whistle blew, is ample description of the game. A fast rough game with Dents, gave us the group championship to the tune of 11-5 with Radmore tallying 6 of them and Reeves doing great work offensively.

In the semi-finals with Meds, a star was born when Gilbert broke his scoring jinx and netted three of the team's goals in a 7-4 victory. Obtaining a bye into the finals, we practised and waited for the outcome of the U.C.-Vic clash with the former coming out on top.

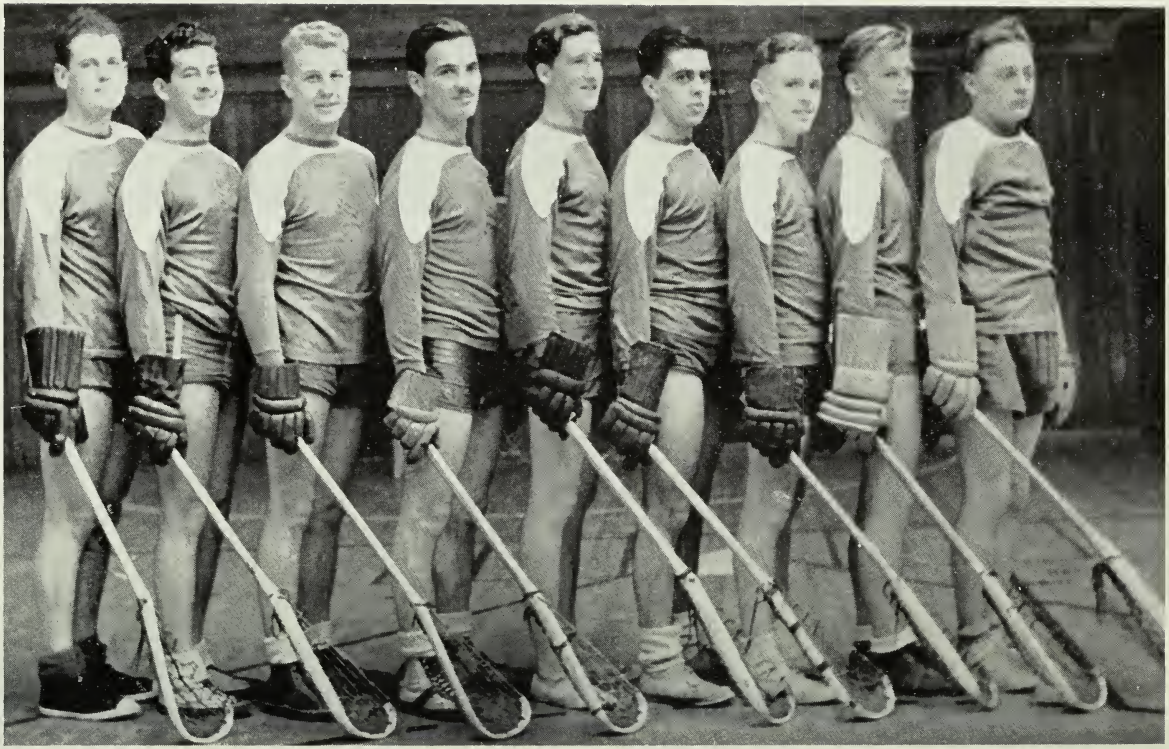
With Starr on the injury list, we went into the first game against the highly-rated U.C. team with slight nervousness. Playing our best lacrosse of the season, we trounced the Artsmen 9-3 with Moorehead and Radmore, the ace scorers, with three apiece. With complete confidence, we entered the second game of the series against U.C. with the single purpose of winning two straight. With Bryce, Moorehead and Radmore running wild, U.C. didn't have a chance (even our manager scored) and we emerged victorious by 11-4 and away we wandered to celebrate in the engineers' manner.

To choose individual stars is difficult and those who watched the game will probably dispute decisions. Everyone will agree that Newman, the goal-tender, deserves plenty of credit for his superb showing.

Congratulations, lads, and may we do the same again next year.

J. Quist,
Manager.

JUNIOR LACROSSE



J. Prentice, A. Gorman, A. Crosby, F. Kellam (*manager*), A. Rankin, F. Winn, F. Lewarne, I. Currie, A. Capper.
Absent: B. Kelly, S. Kent.

JUNIOR SCHOOL LACROSSE

The members of this year's edition of the Junior Lacrosse Team have been worthy representatives of School's "gutted stick" artists. The Juniors were grouped with Pharmacy, Vic and St. Mikes, which constituted the strongest group in the league. This fact is self evident when one considers that Pharmacy, Vic and School finished the schedule in a three-way tie, only to knot the standing up again, after a round robin series. Finally Pharmacy was chosen to go on, and Junior School was slated against Vic. After a hard-fought, see-saw game, Vic ended up on the long end of an 8-7 score.

Our team started the season well, winning the first four games, chiefly due to the accurate shooting of Frank Lewarne, who scored more than his share of the team's goals. The forward lines, made up of Lewarne, Currie, Winn, Kent, Crosby, Rankin, Kelly, and Kellam, left no room for criticism, while Gorman and Prentice formed a rearguard that gave Capper good protection in the nets. Despite perfect passing and checking, we were slightly short of championship rating, leaving a tired Vic team to lose out to the well rested boys from U.C.

With such stars as Lewarne, Ranking, Kent, Prentice, Kelly, Capper and Kellam moving up to Senior ranks next year, the championship seniors should make a very strong bid for the Dafoe cup again next year. Junior School's chances also look bright next year with Winn, Currie, Crosby and Gorman making a strong nucleus for a first rate team.

FRANK KELLAM.

III LACROSSE TEAM

M Aykroyd (*manager*), B. Kelly, D. Grosskurth, J. Brennan, S. Willmott, W. Moeser, H. Forbes, L. Lennon, G. Biggs, A. Lewis, J. Morice.

III LACROSSE TEAM

The Third Team is essentially a farm team for the Juniors, and most of the lads are Junior material who for some reason or another did not make the grade. The team had rather an unfortunate season, having the discouraging record of losing six games out of six. It wasn't the quality of play that was the deciding factor in the games, but rather a series of unfortunate incidents, unknown to School rooters. Biggs, Grosskurth, Brennan and Kelly were playing on the now famous Junior School rugby team, and hence were unable to attend practices and also several games. These four men were the back-bone of the team and with such important cogs missing at important times, the team found it tough going. Accidents to Forestell and Kelly, necessitating medical and dental attention, did not improve the prowess of the team in the least.

The opening game of the season with U.C., who went on into the finals, was a 11-2 defeat for us. Emmanuel and Meds gave us two more defeats to the tune of 10-4 and 14-2 respectively. The following two games were close and the boys fought every inch of the way. Forestell and Kelly played "heads-up" lacrosse but again we had to bow to superior playing. Our final game was a victory for Meds, despite our stellar performance.

The pick of the team were Kelly and Forestell with Forbes, Brennan and Biggs close behind. A new-comer, John Morice, did a good job of guarding his "little hempen home" against the enemy fire all season. Willmot, Moeser and Grosskurth were the other members of the team.

Although their record was not so "hot", the boys had a great deal of fun and there is no doubt they will form an important nucleus of the ranks next year.

M. J. Aykroyd.

SENIOR WATERPOLO TEAM

Second Row: G. Reeves, F. DeMarco, W. Staples.
Front Row: P. Turner, D. Allan, F. Idenden, P. Rogers.

SENIOR SCHOOL WATERPOLO

Senior School, consisting of last year's Junior Team, with the exception of the goalie and substitutes, is once more setting a record for shut-outs. With but two games left to play and holding their own by a large margin they are being called to meet the surprising Emmanuel team in the finals.

If the power-house tactics of Staples, DeMarco, Reeves and Turner can swamp the former intercollegiate members of the Emmanuel team, the Eckhardt trophy will be back on the shelf where it belongs.

This School team, having the advantage of three years' organization, has developed a set of plays which leaves their opponents dizzy. Their performance under ordinary conditions would warrant Intercollegiate berths.

Idenden and Mees consistently kept the ball out of the goal while Allan and Rogers on defence have succeeded in stopping most of the plays which got past the centre of the pool.

PECK TURNER.

JUNIOR WATERPOLO

Front Row: M. Gottlieb, W. Moffat, J. Northwood.
Second Row: R. Byrnes, C. Rimmer, J. Brace, H. Spence.

JUNIOR WATERPOLO

At the time of writing, Junior S.P.S. has played only three games, winning one and losing two. The Engineers, with a rather hurriedly picked team, opened the season by playing against Junior Meds who edged them out by a score of 1-0. After this bad start the team came into their stride by shipping Junior Vic 7-0. The following day they lost a closely fought match with Emmanuel 3-1.

The team is improving greatly as the season progresses. It has some of the fastest swimmers in the University, who should be able to pick up the knack of ball-handling quite easily.

Jack Bell—Goal. Has had experience on last year's team. Jack is very dependable and saves many sure goals.

Chuck Rimmer—Defence. Keeps the ball up to his forwards by his quick throwing.

Eric Hill—Defence. Has a hard straight shot which he makes good use of.

Julian Brace—Rover. Is one of the best men in the league. Julian can handle and throw a ball like a veteran, and can tire his check by his tireless swimming.

Bill Moffat—Forward. Is the fastest swimmer in Varsity. Bill, with his strong swimming is a hard man to check.

Ray Byrnes—Forward. Has a deadly shot and is very tricky around the goal although not a fast swimmer.

Morris Gottlieb—another very fast swimmer. He tries hard and will make a good waterpolo player after some experience.

Johnny Northwood—Forward. Has had a bit more experience than most of those on the team. Johnny, with this and being a fairly fast swimmer, proves himself quite useful on the forward line with Moffat and Byrnes.

Spence, Iglesias, and Ritch complete the team. Spence is a hard worker and shows promise. Both Iglesias and Ritch played on last year's team but have played little this year.

E. J. Northwood,
Manager.

SENIOR HOCKEY TEAM

S. Munro, J. Fitzpatrick, H. Mole, J. McLinden, B. Underhill, D. Allen, R. Forestell, B. DesRoche, J. Quist, E. Bridgeland.

SENIOR S.P.S. HOCKEY

At the time of writing, Senior S.P.S. has only played three games and has still to taste the bitter medicine of defeat. This year, we had great difficulty in getting enough players due to the extra work that the fellows were doing on account of the early closing of School.

In our first game, we ended up with a tie against St. Mikes. The greater part of this game was played short-handed. At no time did we have more than eight players and at one time in the game we had only five men on the ice with no goal-keeper. Bill Moore, our goal-keeper, had to retire early in the game due to mouth injuries.

In our second game we had little trouble overcoming Junior Meds, due mainly to the stellar performance of Bill Robinson. Bill played two grand games with us, but after the second game he was called away on active service. Alex. Lambe and Ted Weir also left at this time, which weakened our team considerably.

Our third game ended in a tie against the highly rated Trinity team who were last year's champions and one of the favourites for this year.

This year we were fortunate in getting Ed Bridgland as our coach. The team may lack the strength of numbers, but it has that fighting spirit and experience which will help us get into the finals.

J. S. Munro,
Manager.

JUNIOR HOCKEY

J. Simpson, W. Hambly, H. Seymour, B. Hamilton. J. Dickie, S. Penoyer, G. Workman, D. Grosskurth, B. Spence, M. Douglass, W. McLaughlin, D. Roland, M. J. A. Aykroyd (*manager*).

JUNIOR SCHOOL HOCKEY

With "Workie" Workman, that veteran of some 70-odd hockey games, and last year's Intercollegiate sub goalie, in the net, with last year's defence team of Hambley and Hamilton, with last year's line of Pennoyer, Grosskurth and Douglas, the Juniors have achieved the enviable record among School teams of 3 wins in 3 games. To insure success both in the Reed Championship fight and in the Jenning's Cup race there is the other, but by no means second line, namely Dickie, McLaughlin and Spence, and the defence of Seymour and Simpson. With the exception of Workman, Seymour and McLaughlin the team is made up of old timers reaching the semi-finals last year.

"Workie" is putting up a good show with only 2 goals to date scored against him. Assisting and protecting him are defencemen Hamilton and/or Roland, and Hal Seymour, late of the III's, now teamed with "Long John Simpson." This year's intramural ruling calls for only 11 men dressed for a game, and in order to play two complete lines we have sacrificed the usual sub-goalie, putting the onus on Workman.

In the usual season-opening game with U.C., the Juniors, although badly in need of a practice, and out of condition from much post-examination celebrating, were able to win from U.C. The stellar work of goalie MacCulloch of U.C. coupled with the confusion in front of the nets kept the score down to 3-0.

In the intervening week the boys had several practices and in the next game defeated the Dentists by the score of 4-1. A week's lay-off with several good solid practices enabled the Juniors, in Dick a Merriwell finish to edge the Victoria I men out by a 3-1 count.

The scoring so far has been fairly well divided between the lines, with Douglas, McLauchlin, and Simpson leading the field.

On the whole, the boys are playing a better game compared with last year, due to valuable experience gained and due to the able coaching of Jack Simpson.

If the fellows keep up the good work and are not hindered too badly by military training and a full day at school, I predict another winner for School.

"Ack" Aykroyd,
Manager.

III HOCKEY

J. Reynolds (*manager*), I. Shepherd, D. Barnes, W. Bland, C. Livingstone, R. Code, F. DeMarco, N. Prideaux, J. Quist.

S.P.S. III HOCKEY

The Third Hockey team was in a strong group comprised of O.C.E., St. Mikes "B", and Emmanuel. At the time of writing the team has won one, lost one and tied one. The Thirds got off to an excellent start against a hard-trying Emmanuel squad. Aided by a couple of players from the Senior team, the Thirds swarmed over the Theologs to take them 12-0. Outside of Bill Robinson from the Seniors, who drove in four goals, Ian Shepherd, hard shooting right winger, was the top marksman with three goals and an assist. Bland and Code bulged the twine once apiece, while the late George Morley played a great game in the nets, stopping everything that came his way.

The second game was played against a strong St. Mikes "B" team. The Irish broke quickly into a two goal lead, but the fighting S.P.S. squad tied it up on smart goals by Shepherd and Code. It was at this point that George Morley collapsed on the ice, and the contest was promptly called by referee "Wilky" Davy.

Against O.C.E., the dark-horse team of the Jenning's Cup race, the short-handed Thirds went down to defeat 8-1, with Dick Code sniping the solitary goal. The outstanding player on the ice in this game was Charlie Livingston, who gamely took over the net-minding job.

The first-string forward line made up of Bill Bland at centre, flanked by Dick Code and Ian Shepherd on the wings, should certainly fatten the team's scoring averages with three games yet to be played. The second line of Bob Tamblyn, Prideaux and Quist also went very well. Frank DeMarco, Don Hamlin, and Dud Barnes, formed a hard-hitting defence. DeMarco, with his sparkling solo rushes and never-say-die spirit was outstanding. Ed Reynolds, the manager, left School shortly after the season began to join the Canadian Forces and Jim Hawken ably took over the job of guiding the team.

W. Bland.

SENIOR BASEBALL

Second Row: W. Diak, B. Edwards, H. Barrett, A. Barry, J. Hirschorn, S. Munro.
Front Row: C. F. Starr, J. Jaffe, P. Pancer.

SENIOR SCHOOL BASEBALL TEAM

The Senior Ball team showed prospects of developing into a real ball club. We opened the season poorly against our arch rivals, Senior Meds. We dropped this one by the score of 7-1.

In our second game, we lost to U.C. by one run. It was in the last of the fourth inning that they managed to push the winning tally across.

It was at this stage of the season that the army, the Armoured Brigade, deprived us of three of our best players, namely, Jock Waite, Eddie Reynolds, and Bill Robinson. With these fellows out, it left the team short handed.

In our next attempt against Vic, the boys were out to do-or-die for School. In this encounter they showed their best form of the season to date, whipping Vic by the score of 14-7.

At the time of writing, the schedule is only half over and the best part is to come. If we get in there, and win the next three games, we'll end up on top of the group; and it can be done for the following collection of talent is certainly capable:

Fred Starr—Catcher. A perfect ball player, one of the best hitters, and an excellent catcher.

Walter Diak—Pitcher. Spending his third season with the Seniors and has plenty on the ball.

Stu Munro—holds down first base. Good all-around ball player.

John Hirschorn, Bruce Edwards—two good short stops.

Waite, Robinson, Reynolds—Army men now, and fighting men on the ball field.

Ab Barry, Joe Jaffe—you can depend on either for a hit, real ball hawks.

Herb Barrett—strong hitter and capable in the outfield.

Lou Pancer—the Brain Trust—the guiding hand for the Club.

L. Pancer,
Manager.

JUNIOR BASEBALL

Front Row: H. E. Perks, W. D. Small, S. Moses, J. T. Cawley, A. MacKenzie, V. W. Diak (*Manager*).
Second Row: W. D. Anderson, W. J. Brant, D. M. Gibson, P. Mason, D. L. Hamlin.

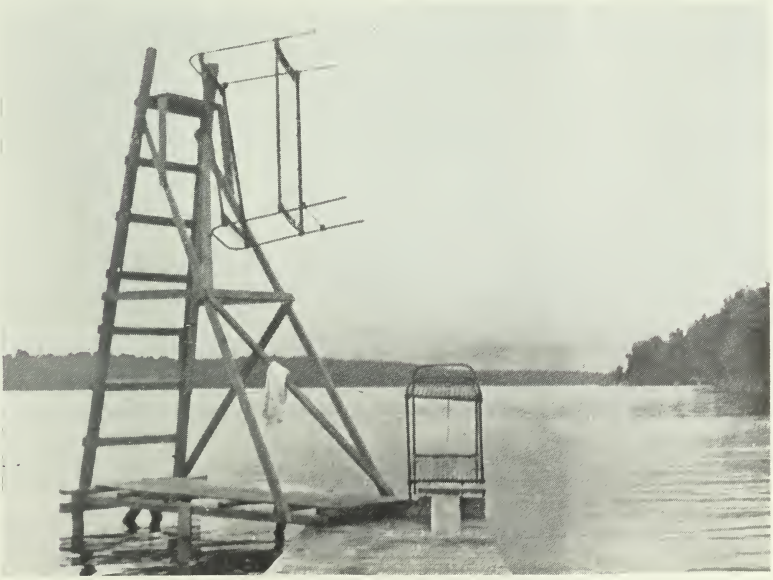
JUNIOR BASEBALL

Up to the present time the Junior School Baseball team has lost only one game. With three more games to be played, the prospects of winning all of them, as well as the group seem exceptionally good.

The boys play good clean ball all the time, and they are good hitters as well as fielders. When they play, they play as a team with the School spirit behind urging every man to do his best.

The able offerings of pitcher Brant were received by Cawley behind the plate. Gibson on first, Ashton and Mackenzie on second base, Hamlin and Perks at short, Moses and Hamlin at third, maintained their posts in the infield. The outfield was guarded by Small, Wilson and

V. W. Diak,
Manager.



III BASEBALL

Front Row: R. Timms, W. Bland, O. Smith, V. Smith, W. Glynn
Second Row: C. Livingstone, D. Olsen, J. Leith, D. Marshall, G. Morris, W. Robinson.

III BASEBALL TEAM

After a mad shambles—the first practice to pick two Senior teams for School—the smoke cleared and the III team emerged made up entirely of third year men. Later it was proved that 4T2 had some very fine ballplayers.

Leitch, usually a first base man, was converted into a catcher right at the start and made himself very much at home.

Robinson throws the fastest ball in the group, thus making him a right smart pitcher.

Olson specializes in hooks and curves, and holds up the other half of a good pitching staff.

Morris on first base is one of the smoothest in the league.

Glynn hits solid and plays a hardy game at second.

Bland knows his baseball and plays a sound game around the hot corner.

Livingstone, one of our heaviest hitters also excels in the infield.

Van Smith—a hard hitter and a sure-fire short stop.

Marshall—another power hitter, plays a very noisy outfield.

Timms arrived late—played one good game, then received the measles germ.

Greeniaus played in the first game, then went under the surgeon's care to be out for the season.

O. K. Smith—not a bad ball player, but has a lot of pull with the manager.

Only two games have been played so far. Dents 3, School 3; Wycliffe 2, School 18. Not bad. We look for a great season.

O. K. Smith,
Manager.

IV BASEBALL

Front Row: J. Boyle, W. Campbell, J. Jaffe (*Manager*), J. Allen, N. Christilaw, J. Mitchell, W. McCowan.
Second Row: J. Bell, A. Chepkin, R. Workman, C. Gill, R. Brookes, W. Parchello, G. Duncan.

IV BASEBALL

At the time of writing, the team is at the head of the group with 2 wins and 1 tie in 3 games. The first scheduled game, with Meds, ended in a 4-4 tie, and believe it or not, Parchello, our pitching ace, pitched a no-hit game.

The second game played with U.C., was featured by the powerful hitting of Brookes, McCowan, Mitchell, Workman, etc., and ended with the score of 14-8 in our favour.

In the third game we were able to overcome the hard-hitting Aerial Navigation crew to the tune of 7-3.

The team is as follows:

McCowan—A fair catcher and powerful hitter.

Parchello and Bell—1st and 2nd string pitchers respectively. The former, our ace, is also a fair hitter.

Brooks—First base. One of the "Bashers" on the team.

Campbell—Second base. A fair ballplayer.

Workman and Christilaw—Shortstops. Both good hitters, the latter a whizz on the bases.

Allen—Third base. Doing a good job at the hot corner.

Biggs and Chapkin—Alternate infielders.

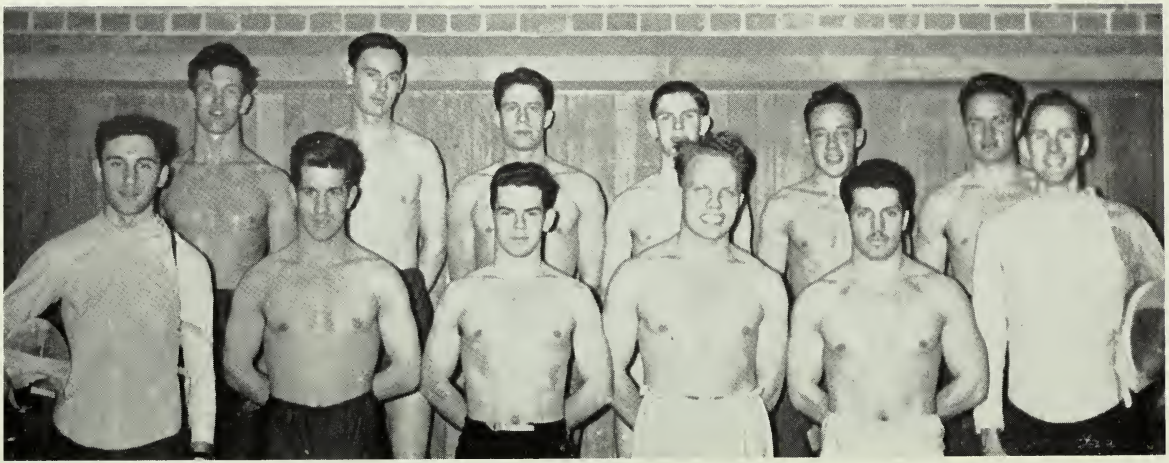
Mitchell and Boyle—Outfield. The former is one of the dependable hitters on the team.

Duncan and Gill—Alternate outfielders. Two hardworking boys.

I'll stick my neck out and predict that we'll be at the top of the group at the finish of the schedule.

J. B. Jaffe,
Manager.

BOXING, WRESTLING AND FENCING



Second Row: A. Chepkin, R. Fox, J. Heffernan, R. Ritchie, J. Bulando, H. Huckle.
Front Row: W. Henry, K. O'Donnell, W. Ramore, J. Cutt, N. Mustard, F. Dobson (*manager*).

S.P.S. BOXING, WRESTLING, AND FENCING TEAM

Once again the Davidson Cup, symbolic of B.W. & F. supremacy, rests within the portals of School. For the past few years the mit and mat men from School have had little difficulty in dominating this sport. School has always had a good representation on the Intercollegiate boxing, wrestling, and fencing teams; and this year, Intercollegiate competitions cancelled, these men turned their efforts towards the interfaculty contests.

In the Senior Assault-At-Arms, School amassed 27 points to win easily over its nearest rival, Victoria College with 13 points. On February 1st, the School team annexed another title with the winning of the Novice Assault-At-Arms. Representing School on these two occasions were the following musclemen:

"Smoky" Cutt—1939-40 Intercollegiate wrestler, butted his cigarette long enough to slip 2 falls on Lambe and take the 118 lb. class in Senior Assault.

Jerry Heffernan—a promising 125 lb. wrestler for coach Daly to work on next year, won his weight in the Novice Assault with ease.

Neil Mustard—Senior Intercollegiate Wrestling Champion at 118 lbs. in 1939, and 125 in 1940. Unchallenged in Senior Assault. One of the strongest and most scientific wrestlers the University has ever produced.

Warner "Goof Kid" Eakins—surprise package of the Novice Assault who came through to take the 135 lb. wrestling division.

Frank Dobson—Senior Intercollegiate Wrestling Champion at 135 lbs. for past two years.

Bill Ramore (the barrel-chested Indian)—Senior Intercollegiate Boxing Champion at 145 lbs. in 1939, and 155 in 1940. Proved himself to be the finest and most versatile B.W. & F. man at the University by winning 175 boxing in the Senior Assault and the 155 lb. wrestling in the Novice Meet.

Joe Bullanda (alias Charles Atlas)—member of last year's Senior Intercollegiate Wrestling Team. Lost the 155 lb. division at Senior Assault on the flip of a coin after wrestling to a 16 minute draw.

Don Grosskurth—won 165 lb. wrestling at the Novice Assault.

Rod "Bull" Ritchie—165 lb. wrestling champion. Promising freshman likely to be heard a great deal more of in the future.

Willard Henry—175 lb. Wrestling Champion at Senior Assault.

SENIOR SKI TEAM

Front Row: J. Ellis, J. Fox, D. Clark, F. Connor.
Second Row: B. Bolton, W. Kingsmill, K. Netter, R. Smart.

Willard is a game freshman whom coach Daly is watching.

Dick Fox—strongman freshman from Ottawa. Won 145 lb. wrestling in Senior Assault and Novice Assault.

Bob Scott—powerhouse of School. Won heavyweight wrestling in Senior Assault. An agile wrestler despite his size.

K. O'Donnel—165 lb. boxer. Lost a very close decision in the finals of Novice Assault.

J. Huckle—newcomer to fencing field. Won Novice Assault.

Graduating this year from School are three Intercollegiate champions: Mustard, Ramore, and Dobson. However, judging by the showing of the remainder of the team in the Assaults this year, they are passing the torch to capable hands who can be trusted to safe-guard for School the custody of the Davidson Cup.

Frank Dobson,
Manager.

SCHOOL SKIING

As usual, the best representation of University skiers this year was from School. On account of military activities, the club's program was greatly curtailed but Russ Smart from the Little Red School-house organized an excellent interfaculty set-up, which will be continued as a permanent feature in the years to come. As in other athletics, faculties were allotted points on the intramural system, with a final elimination meet as the result. With the finals in the offing, Schoolmen, who are reputedly the hardest-worked men in the world this year, are well in the lead.

Russ Smart and Tony Kingsmill lead the School squad of Ritch, Ellis, Gordon, Netter, Fox, Clark, Connor, Tidy, Ames, Henry, Kingsmill, Fleming, and countless others. These stalwarts, for the final test, arose as a man and met in Murrays at the crack of dawn preparatory to "burning the snow off" well-known slopes at Caledon, Aurora and Collingwood—that jewel set on the frosty shores of Lake Huron. The man who has not shuffled down the Schuss at the Big Blue Mountain has yet to live. The boys came back from this meet with another victory for School.

Tony Kingsmill appears to be the only casualty, but a week in Quebec after graduation should take care of his leg.

All in all, the season has been a very successful one, and School has many skiers of whom she may be proud. Come on, School, let's give them a big push toward future victories.

J. Fleming.

SENIOR INTERFACULTY SWIMMING

Front Row: C. Rimmer, J. Brace, M. Gottlieb, W. Moffat, J. Northwood.
Second Row: W. Staples, T. Graham, R. Muller, W. Payne, F. DeMarco (*manager*).

SWIMMING

Something new was introduced into Intramural Athletics this year. It was the forming of a swimming league with round robin games just as in rugby or basketball. School lost no time taking advantage of the new set up to gain some points in the Reed Trophy race.

Three teams were entered by School and all three teams reached the play-offs. The Thirds were beaten out by their own pals, the Junior School team and Senior School lost out to U.C. Junior School, however, went on to defeat the highly praised U.C. team in the finals. Johnny Northwood and Bill Moffat were the top hands of the School team gaining 16 out of the 18 points between them.

The usual novice and Senior all-interfaculty meets were held as in other years. School took the novice meet on the top side of the most lopsided score in novice meet history (55-31). The closest team had only 14 points. Dave Rogers was the star of this meet taking 2 firsts and a second for 13 points. Johnny Northwood got a first, a second and was on a winning relay. Bill Moffat and Maurice took a first each and also formed half of the winning relay team.

So good was the School novice team that nine of them made School's Senior Team. Johnny Northwood, Bill Moffat, Maurice Gottlieb, Dave Rogers, Bill Payne, Chuck Rimmer, Julian Bruce, Tom Graham, and Dick Mueller all made the jump. These chaps together with starry Bill Staples of intercollegiate fame formed a strong Senior squad.

The loss of John Girvan, however, was too big a blow and the team was defeated in a close meet. Johnny left a couple of weeks before the meet to go on Active Service. These boys really fought to fill up that gap left by Girvan and their efforts just fell short.

Frank DeMarco,
Manager.

SQUASH RACQUETS

For the benefit of newcomers to the sport, might I say that squash is in its infancy, as far as an intramural sport is concerned, last year being the first in which it has been included as part of the program. Points are awarded by Mac McCutcheon in the T. A. Reed Trophy race, in a manner similar to any other sport. For instance, each match won means a certain number of points for the winning faculty.

Last year the S.P.S. team won the championship, and this year another team has entered with the same fundamental idea. According to the rules governing the interfaculty tournament, each faculty is permitted to enter a four-man team. This team was determined, not merely by the manager's choice, but by an elimination tournament run in this faculty before Christmas. The four men who were successful in reaching the semi-finals were entered as School's team, and, in order of ranking, their names were: John Fitzpatrick, Bob Tamblyn, Lionel West, Andy Armstrong.

This tournament was divided up into four flights, one for each man entered, which makes it possible for School to win the four of them. However, this is highly impossible since Meds and St. Mikes have their own ideas, and should each win one flight. S.P.S. could still be the victors by winning the other two flights.

At the present time, the tournament is just beginning, but if I could be a prophet, for the sake of filling up some space, I would call School to win at least the first and third flights; a surprise could give us the second flight, but a victory in the fourth flight has already taken wings.

In taking a quick survey of the team, in general, I would say that it was somewhat better than the average team entered this year, and without too much difficulty they should again take the championship.

John Fitzpatrick,
Manager.

S.P.S. IV HOCKEY

So far this team has shown up fairly well, having won its first game from U.C. III by 11-0, and losing the second by a bit of tough luck to Aerial Navigation by 3-2. However, the boys have been getting in a lot of practice and it is hoped that a good showing by the team will be made ere this season passes.

There was a large turnout for this team and it was a difficult job weeding out the final gang to represent School IVs.

Bill Greig—Goalkeeper. Has done good work so far this season, being extremely cool-headed at the right times.

Bill Moeser—Defence. Played with the Junior Team of a year ago—a steady player who doesn't let much slip by.

Dick Quittenton—Defence. Back again from last year's IVs still playing that stellar, Stonewall type of game, is a good man and keeps the team plenty hep with his pep talks from the ice.

Collin Bennett—Defence. A School freshman who is showing good work with the squad.

Jim Boa—Centre. Hard working, a good playmaker, plays along with Kelly and Maughan.

Brian Kelly—Right wing. Another man from last year's squad. A cool player who bulges the twine quite often.

Ron Maughan—Left wing. A fast skater and a good stick-handler.

Pat McDonagh—Centre. Who really goes like the wind.

Dick LeSueur—Right wing. Another veteran from last year's IV squad, showing up well.

Johnnie Allen—Left wing. Another fast man who plays along with McDonagh and LeSueur.

Bill Cummings—Utility man who is playing centre at present, is not very big but knows how to get around.

With the greater part of its schedule yet to play, and the team starting to get organized, it may be expected to see this team in a play-off berth before long.

H. W. W. Bucke,
Manager.

L. Stanners, D. Staples, W. Steeves (*team captain*), J. Boa, B. Wallace.

RIFLE ASSOCIATION

Another successful year for School has been completed in the Rifle Association. For the 7th consecutive year, School has won the coveted Mitchell Cup, presented by Dean Mitchell for Inter-faculty competition. Once again, over half the University of Toronto Rifle Team, competing against other universities in Canada and the United States, was made up of Schoolmen. In individual competition also, S.P.S. led all other faculties by taking first, second and third place in the Utton Trophy match.

The S.P.S. team won the Mitchell Cup with a score of 976 out of 1000, giving them a decisive victory over the other faculties. The team was composed of Len Stanners, Dave Staples, Jim Boa, Bae Wallace, and Warwick Steeves. The Utton Trophy for individual competition was won this year by L. Stanners of S.P.S. Second and third places were also taken by Schoolmen; W. Steeves placing second and J. Boa, third. Other Schoolmen deserving mention for good scores in various competitions are: J. Dempster, J. Livingstone, W. Folkins, and R. Freele.

This year, due to the training of troops at Long Branch, the club was unable to secure the use of the outdoor ranges as had been its privilege in the past. As a result, the club activities were confined to the indoor range in the basement of Hart House. Here, using the club's .22 calibre match rifles, members enjoyed shooting four nights a week throughout the year.

Membership this year was small but the quality of the shooting was much better than usual. To stimulate interest and to improve scores, numerous matches were held throughout the year. Members were grouped according to their shooting ability, and a sterling silver teaspoon was presented each month to the member turning in the highest score for his group. An innovation was made this year by the holding of novelty matches and it proved to be very popular.

Shooting is over for another year, the last for several of us who are graduating this spring. To those who will carry on,—good luck, and may you continue to show that in shooting as in other sports, Schoolmen excel. To those who have not yet been members of the Rifle Club, let us point out that the club offers an excellent opportunity to learn to shoot and, through numerous competition, to really enjoy it. And remember, if you can shoot, School needs you;

W. E. Steeves,
Team Captain.

CANADIAN OFFICERS TRAINING CORPS

CANADIAN OFFICERS TRAINING CORPS

A very military atmosphere surrounds the University this year. Every male undergraduate, who is not exempted for medical or other reasons, is taking military training in one form or another. This training is carried out under the University of Toronto Contingent of the Canadian Officers Training Corps, commanded by Lieut.-Col. H. H. Madill, V.D., Head of the School of Architecture. The organization is divided into three main groups:— The Officers Training Battalion, The Training Centre Battalion, and those in the age group under 20 years of age as at July 15, 1940.

The Officers Training Battalion has a strength of approximately 1450 members, graduates and undergraduates, and all are taking the course leading to qualification as Lieutenant. Instruction is given in the following arms of the Service: Artillery, Engineers, Signals, Infantry (Rifle), Infantry (Machine Gun), Army Service Corps, Army Medical Corps, Army Dental Corps, and Ordnance Mechanical Engineers (O.M.E.). Major M. B. Watson is Second in Command of the Battalion and also Chief Instructor. Capt. H. C. H. Miller is Adjutant.

Instruction is given at the Headquarters of the Contingent and the first paper (Common to all arms) was written in December and the second paper (Special to arm) will be written in March. This will be followed by two weeks at camp in the spring, when qualification in the practical work will be taken.

Out of the total number in the Officers Training Battalion, about 500 are graduates either of the University of Toronto or elsewhere. Of the remainder about 250 are undergraduates of the Faculty of Applied Science and Engineering, and they may be found taking training in every arm of the service except the Medical Corps and the Dental Corps. In some branches only engineering graduates or undergraduates are accepted.

During the Session 1939-40 a number of students were accepted in a two-year qualifying course. They wrote the first paper at the end of the session and many are back in the Corps again this year, taking their second paper. All others in the Corps are endeavouring to qualify in one year. At the beginning of the Session 1940-41, membership in the Corps was open only to selected students from the graduating years. These, with the graduates and those taking the second paper in the two-year course, make up the total of 1450.

divided into twelve companies. By arms of the service the Corps is divided as follows:

Artillery
Engineers
Signals
Infantry (Rifle)
Infantry (Machine Gun)
Army Service Corps
Army Medical Corps
Ordnance Mechanical Engineers (O.M.E.)

The second large military organization under the C.O.T.C. is the Training Centre Battalion with a strength of about 1400, and is made up of students between the ages of 20 and 25 who might be called up for compulsory training at militia training centres. Under an agreement between the University and the Dominion Government, these students are permitted to take their training in the University during the Session, to be followed by two weeks at camp in the summer; thus they are not liable to have their academic work interrupted by being called up for 30 days' training. These students spend about seven hours per week at drill and lectures.

The Training Centre Battalion, which was specially organized to take care of the compulsory training, is commanded by Lieut.-Col. W. S. Wilson, E.D., Secretary of the Faculty of Applied Science and Engineering, who is also Second in Command of the Contingent. Major W. S. Wallace is Second in Command of the Battalion. The Chief Instructor is Major G. R. Lane, and the Adjutant is Lieut. E. A. Macdonald.

The Battalion is divided into six companies, and "S" Company, the largest in the Battalion, with a strength of about 375, is commanded by Major W. J. T. Wright, M.B.E.

The Company has six platoons commanded by 2/Lts.: W. A. Stevens, E. P. Bridgland, C. F. T. Rounthwaite, J. M. Girvan, R.C.E., M. R. Maynard and R. Milne, W. E. W. Steeves, . . Stewart.

In the Training Centre Battalion the same syllabus of training is followed as is laid down for the Militia Training Centres, and consists of: squad drill, manual of arms, bayonet fighting, musketry, gas drill, route marches, lectures on military law, field engineering, organization, administration and other subjects of interest to a soldier.

The Training Centre Battalion, which paraded for the first time on October 4, 1940, for organization purposes, is made up as follows:

O Coy (Arts, Univ. College).....Major F. R. Crocombe
Q Coy (Arts).....Capt. C. R. Sanderson
R Coy (Medical).....Capt. M. Crabtree, M.C.
S Coy (Applied Science).....Major W. J. T. Wright, M.B.E.
T Coy (Dental).....Capt. R. A. Barbour, M.C.
W Coy (Pharmacy, O.C.E.).....Capt. L. T. Hargreaves

The third group is comprised of students 18 and 19 years of age, of whom there are about 800, who take a lesser amount of combined military training and physical training. They have taken a good deal of squad drill and rifle exercises.

The Training Centre Battalion is regarded as a depot from which the candidates for the Officers Training Battalion will be drawn next session. All the work taken is fundamental and students going forward for qualification for officers will have an excellent foundation in the rudiments of military knowledge on which to build their further training, and will have a great advantage over those who have not had the benefit of the preliminary training.

All students in all three groups have been medically examined and those who are not fit are exempted from training. Battle dress

has been issued to the Officers Training Battalion, but at the time of writing, has not been issued to the Training Centre Battalion.

On October 19 both Battalions were reviewed by Brig. E. W. Haldenby, M.C., who took the 48th Highlanders to England, late in 1939, and who returned to take command of the 9th Brigade, Third Division. Brig. Haldenby is a graduate of the Faculty of Applied Science and Engineering, in 1921. He was one of the original cadets in the C.O.T.C. on its formation in 1914, and was promoted to Corporal by Capt. (now Lieut.-Col.) H. H. Madill.

Major-General C. F. Constantine, D.S.O., newly appointed D.O.C., M.D. 2 also reviewed both Battalions on November 16. Much to the discomfort of all concerned, the latter part of the march past took place in a raging snow storm.

The work in the two Battalions has meant a tremendous amount of hard work on the part of its members and undoubtedly has interfered in many cases with academic work, but the difficulties have been cheerfully met by all concerned. Lecture timetables have been radjusted by the Faculties and varying amounts of credit are given on academic work for training taken in the Officers Training Battalion and the Training Centre Battalion. Tribute is paid to staff and students for the excellent co-operation and tolerance which has been displayed on every hand.

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